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AN EXPERIMENTAL STUDY OF THE GROUP VERSUS THE ONE-TO-ONE INSTRUCTIONAL RELATIONSHIP IN FIRST GRADE BASAL READING PROGRAMS.

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THE RELATIONSHIP OF TWO PATTERNS OF INSTRUCTION TO VARIOUS ASPECTS OF BEGINNING READING INSTRUCTION WAS STUDIED. THESE ASPECTS INCLUDED (1) READING ACHIEVEMENT, (2) SCHOOL-RELATED ATTITUDES, (3) SOCIOMETRIC CHOICES, (4) SCHOOL-RELATED ANXIETY, AND (5) TEACHER AWARENESS. THE 10 EXPERIMENTAL AND 10 CONTROL GROUPS WERE PRETESTED WITH THE METROPOLITAN READINESS AND PINTNER-CUNNINGHAM TESTS. THE EXPERIMENTAL TREATMENT CONSISTED OF THE USE OF THE ONE-TO-ONE PROCEDURE WHILE THE CONTROL GROUP USED THE TRADITIONAL BASAL READING THREE-GROUP PROCEDURE. RESULTS OF THE STUDY INDICATED THAT NO SIGNIFICANT DIFFERENCES EXISTED BETWEEN THE TWO GROUPS IN READING ACHIEVEMENT, PUPIL SCHOOL-RELATED ANXIETY OR TEACHER KNOWLEDGE OF PUPIL ACHIEVEMENT. SIGNIFICANT DIFFERENCES FAVORING THE EXPERIMENTAL GROUP WERE FOUND ON MEASURES OF PUPIL ATTITUDE TOWARD READING AND ON THE PATTERN OF PUPIL FRIENDSHIP CHOICES. (RS)

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Cooperative Research Project No. 2674

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THE COMMITTEE FOR RESEARCH IN
BASIC SKILLS

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CHAPTER I

BACKGROUND OF THE STUDY

Problem

Ability grouping, as commonly practiced in American beginning reading instruction, is usually defended as: (1) a necessary adjustment to different levels of readiness; or (2) a needed adaptation to different speeds of learning; or (3) a valid means of facilitating teaching by reducing the range of individual differences; or (4) substituting small group competition for total class competition. But why do we persist in thinking of levels of readiness and speeds of learning typically as three and only three levels? Does grouping ever do more than merely reduce, not eliminate, individual differences? Is group competition or self-competition the critical question? Furthermore, does ability grouping, so conceived and executed, produce a true group in the psycho-sociological sense that its members choose to work together for a common purpose? Can ability grouping be seriously defended as a procedure which fundamentally recognizes the dignity and worth of the individual?

In the face of such questions, ability grouping is nevertheless the dominant mode of structuring the interpersonal context in first-grade reading instruction today. There is, however, considerable current interest in a second way of structuring the interpersonal context--the one-to-one relationship characteristic of individualized reading programs. While the latter approach features the self-selection of materials, involves the liberal use of tradebooks, and has been investigated chiefly at the upper-primary and intermediate grade levels, it may be argued that there are important values in the one-to-one instructional relationship <u>per se</u> in teaching reading in first grade even when teachers use their customary teaching methods and basal reading materials. Conceivably, a one-to-one instructional context emphasis might, in comparison to an ability grouping

context, lead to more favorable attitudes toward reading, reduce pupil anxiety about their progress in reading, cause pupil's sociometric choices to be less structured about reading, enable teachers to judge pupil progress in reading more adequately, and produce greater achievement in reading.

The Lakeshore Curriculum Study Council Study

The present study was strongly influenced by a 4-year study of individualized reading at the primary level conducted by the Reading Committee[1] and eight member school systems of the Lakeshore Curriculum Study Council.[2]

The intent of the Lakeshore Council study was to compare the results of a 3-year longitudinal individualized reading program with a basal reading program. Fourteen experimental and 14 control groups were established and examined over a 3-year period, grades 1 through 3. The results of the study indicated statistically significant differences at the .05 level and beyond for achievement scores on standardized reading tests for the individualized reading group at each grade level.

The individualized reading groups in the Lakeshore study varied from the basal groups in two major ways: (1) the teaching relationship was basically a one-to-one conference situation, and (2) the reading material was self-selected by the student from a wide variety of trade and text materials. Thus, two major variables, the nature of the teacher-pupil relationships and the nature of the pupil-material relationships, were confounded in the study.

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[1]Members of the Reading Committee: Rodney Johnson, Chairman; James B. Macdonald, Research Consultant; Alice Sommerfield; John Belton, Research Associate; and Robert Phelps. See for further information: Lakeshore Curriculum Study Council. "A Three Year Longitudinal Study Comparing Individualized and Basal Reading Programs at the Primary Level," Milwaukee, Wisconsin: School of Education, University of Wisconsin-Milwaukee, 1964.(3)

[2]The Lakeshore Curriculum Study Council is a cooperative school study council in the Milwaukee, Wisconsin area composed of 27 school systems and the School of Education of the University of Wisconsin-Milwaukee.

The study, although presenting certain methodological difficulties, was carefully planned and executed. From the experience gained in the study it would appear to be extremely useful to examine either one of the major variables without confounding it with the other.

The Selection of the One-to-One Instructional Relationship as a Major Focus

The fact that interpersonal interaction context is related to learning can be demonstrated or inferred from such studies as those by Anderson and Brewer (1), Lewin, Lippitt and Escalona (4), Withall (5), Flanders (2), and others. The manner is not so well known. Nevertheless it is safe to say that the way individuals relate to each other and the feelings arising from their interaction can be significant factors in the learning of youngsters.

Although it is not clearly demonstrated whether learning can be facilitated equally well at all age levels, there is fairly impressive evidence presented by psychoanalytic theory and clinical research to suggest that the younger the child, the more the learning may be affected by the interpersonal context. Since beginning reading is the major emphasis in first grade programs, and also is the first systematically organized presentation of formal symbolic learning tasks for children, there is sufficient reason to believe that the structure of the interpersonal instructional context may be of considerable significance in the fostering of the learning of reading skills and comprehension, and in the development of attitudes toward self and school learning.

Previous experience with the pupils in the Lakeshore study indicated that it is abundantly clear that the one-to-one relationship is the more feasible to put into practice of the two major characteristics of individualized programs. The throwing away of the security of a known sequence, and the dependence upon a wide variety of uncontrolled and often unknown reading materials, proved to be major problems with teachers. Thus, not only does the one-to-one relationship focus upon what is predicted to be the most significant aspect of "individualized" reading, but it deals with the most feasible aspect of individualization for experimental study and classroom application.

While the vast majority of first grade basal reading programs utilize ability grouping as the primary instructional interpersonal context, there is reason to doubt that this interaction context is either most desirable or most effective in achieving the goals of the reading program. Philosophically, the ability grouping procedure is morally indefensible in terms of our basic western values of human dignity and individual worth. It is a procedure which places an immature and defenseless individual in the context of a systematic peer appraisal of the ability of each to read. In so doing it focuses the evaluation of the child almost solely upon his technical skill in reading. It deliberately invites the immature appraisal and judgment of the performance of selves and others in the peer group context. The child thus becomes a mere cog in the process of developing his technical reading skills while his unique humanness is submerged as a basis for peer appraisal.

Further, the ability group is not a "group" in the social-psychological sense that a group involves a voluntary structure or common purpose and communicative need on the part of the individual group members. Typical ability grouping for reading instruction is much more accurately called a "set," in the mathematical sense that any aggregate of objects can be grouped and called a set. Consequently the democratic aura often attributed to such a "group" is misleading and not appropriate to describe typical reading groups organized for basal reading instruction.

Essentially, it is argued here that the ability group context is an artificial competitive situation focusing upon specific technical acts of the individual. In this situation, few will perceive success at a level commensurate with their desires to be approved and attain mastery. Children's self-image will be damaged by this situation and will lead to a resulting loss in motivation and the erection of barriers and blocks to new learning by encouraging the formation of negative attitudes.

A one-to-one instructional relationship is proposed as a positive alternative to ability grouping for reading instruction. In this situation, the primary instructional teacher-pupil interaction takes place outside the context of the group. Not only does such a relationship lessen the negative competitive aspects of the group setting, but it focuses the teacher's attention upon one individual at a time so that the individual

can periodically receive the undivided attention of the teacher at that time. Thus, the negative aspects of ability grouping are lessened and the positive focus upon the individual and his feelings should increase the desirable conditions for learning to read and help promote more positive attitudes toward school learning tasks.

Such is the context out of which the research project to be described grew. The central hypothesis examined was: If children, using typical basal reading materials, experience a one-to-one instructional relationship with the teacher rather than ability grouping, then achievement in reading will be significantly greater and attitudes toward reading and school learning will be more positive.

CHAPTER II

PROCEDURE

The Sample Population

A random sample, stratified by school, of all first grade teachers supervised by the Dane County, Wisconsin, administrative unit was identified.

The Dane County administrative staff[1] served all school units outside the city of Madison. Predominantly urban suburbs contiguous to Madison were eliminated with one exception from the population. The remaining population from which the sample was drawn consisted of primarily small-town school units and rural-area school units in East and West Dane County. The sample drawn thus represented a predominantly small town and rural school population.

Ten teachers were drawn for the experimental group and ten for the comparison group. The teachers were drawn such that each group was equally divided between the eastern and western sections of Dane County. The selections were intended to be random, but certain administrative considerations qualified the randomness to a degree. Children were assigned to all classrooms on a heterogeneous basis.

The average number of children in each classroom was about 27 initially, thus giving a total sample of about 540 children. The precise number varied somewhat as some children were moved to other classrooms and others were added during the semester. Other considerations, such as the fact that some children were identified as repeaters in the first grade, affected the actual N used in the later analyses of the data.

Early in the experiment, three of the ten "experimental" teachers withdrew from the experiment because they felt unwilling and/or unable to satisfy the experimental conditions.

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[1] Beginning in the fall of 1965, this administrative unit was discontinued due to reorganization procedures in the State.

Orientation Workshops for the Teachers

At the beginning of the fall semester two all-day workshops were held to acquaint the teachers with the nature of the research and to differentially assist the teachers in the one-to-one instructional relationship and in the group instructional relationship in formulating their plans for reading instruction in a manner consistent with the nature of the experiment. The workshops were held on the Saturdays of September 12, and September 19, 1964.

The first workshop session was a joint meeting of all the teachers, some Dane County administrators, and the research staff. In this session the general nature of the experiment was presented together with information concerning testing schedules and the areas of special cooperation needed from the teachers. In subsequent sessions, experimental and control groups met separately.

The sessions with the one-to-one instructional relationship teachers were designed to help the teachers understand operationally how this instructional relationship worked in the classroom. The staff presented some materials concerning the scheduling of conferences and what an actual conference might be like. A tape of a demonstration conference was played. The major portion of these sessions, however, was devoted to discussion among the teachers themselves as they attempted to anticipate and solve some of the problems that might arise.

The meetings with the group instructional relationship teachers were intended as a vitalizing review of an approach to reading instruction with which all of the teachers were already familiar. The emphasis was upon materials, techniques and objectives appropriate to group reading instruction. Here, too, the staff made some presentations but most of the time was spent in a discussion of problems among the teachers themselves.

Reading Instruction Procedures for One-to-One and Group Instructional Relationship Teachers

Procedures Common to Both Groups

All teachers used as the principal instructional medium the basal reading materials which they had previously selected independently of their

knowledge of the experiment. Thus while teachers differed, for example, in the reading materials they used, these differences were not systematically related to the experimental variables.

All teachers received equivalent special funds on deposit with a Madison school supply store for purchase of special supplies in connection with their reading programs. Sentence strips and materials for experience charts were typical purchases for both groups.

Each group was given the services of a consultant from the research staff. These consultants observed classes and conferred with teachers frequently. Each class was visited according to a schedule agreed upon between consultants and teachers. The frequency of visits depended upon the wishes of the teacher. By far, the greater number of visits were requested by teachers in the one-to-one instructional relationship.

It was agreed that the research staff would not attempt to manipulate decisions concerning materials or teaching method beyond assuring that the experimental and control conditions were understood and adhered to. Within the structure of the one-to-one conferences or the ability groups, teachers were free to teach as they chose. This agreement was rigidly kept.

Conduct of Reading Instruction in the One-to-One Instructional Relationship Group

The one-to-one instructional relationship was defined as the situation in which all formal reading instruction took place during individual conferences between the teacher and each child. There was an early period in each classroom when pupils worked together as a class in a formal reading readiness program. The transition to reading instruction under the experimental condition was made gradually and in various ways by various teachers. Several common patterns were noted, however, and these will be described in some detail.

One pattern could be described as a language-experience approach in which experience charts were used. Teachers began early in the school year to develop meaningful experience stories with the class that were made into chart stories dealing with experiences which the class shared in common. Other informal reading experiences were also used. Signs were placed around the room to help children identify words which stood for

important features, as door, crayons, books, or aquarium. One teacher wrote a very simple message, a riddle or some kind of question for her class on the board each morning, frequently using this opportunity to introduce one or two new sight words which she planned to develop later in the day. More directed writing experiences were also used to introduce important sight words which had not occurred naturally in the chart stories.

Gradually the children were encouraged to write their own individual stories which varied in length and complexity from one word to several sentences. Each class member would be asked to make a picture on some suggested theme--something he saw on the way to school, his family, his favorite game, or a picture of anything which he wanted to write about. The teacher circulated among the children and they dictated their stories to her. She wrote the child's story on a roll of lined tag, or "sentence strip," and then read it with him. When the picture was finished, the child copied his story underneath it and then cut the sentence into words and practiced rearranging it in story order. The next day the child read his story again for the teacher and his recognition of words in isolation was checked. After this process had been repeated for some time, the teacher was able to see which children were ready for pre-primers and which would need extended readiness activities. Four or five children would then be taken together for introduction to a book and after several pre-primers and tests to assure mastery of a core sight vocabulary had been completed, conferencing on an individual basis was begun. This process was repeated until each child in the room was being seen on a one-to-one conference basis.

Another common pattern of operation was characterized by initial grouping with individual conferencing begun gradually, usually as each pupil reached the primer level. Teachers who used this method initially felt that each child needed to have the security of daily instruction and guidance on independent activities until he had reached a specified level of proficiency. A certain measure of security for the teacher was also involved in the procedure.

As children were gradually inducted into the conferencing program and were able to work well in it, teachers seemed to gain assurance of the workability of the one-to-one relationship. Frequently, children who were

among the first to begin conferencing conveyed their enthusiasm for this method to the rest of their classmates, who then began to insist that they have reading conferences too.

A third pattern of conference introduction was preceded by total class readiness activities, with conferencing begun around the end of September. All pupils, regardless of position in basal materials, were put on a conferencing basis at once.

Teachers following this general plan felt that the conference could be an appropriate learning situation for children at all levels of materials and tasks. They were often surprised at the rate which some children were able to progress through basal materials, while those who needed more repetition and drill were able to focus on only the vocabulary and skills which they specifically needed. While a few pupils had difficulty in initially proceeding independently between conferences, most of them soon learned to be self-directed.

Scheduling of conferences within each classroom varied. On the average, however, each child was seen individually for a conference twice each week. Conferences varied in length from 10 to 20 minutes.

Within a conference, a child could expect to be checked on reading which he had done since his last conference. This might include having him provide an oral summary of the story or stories, answering specific questions about material presented in the story, or telling what he thought was the most important part. As children were able to cover more and more material between conferences, emphasis was placed on summarizing the most important part or telling the main idea of the story.

A minimum basic assignment of new material which the teacher expected the child to cover before his next conference was then presented, with time allowed for building interest in areas or topics to be covered. New words were presented and those which were difficult for the student were written on cards which he took with him to practice. These would then be brought to his next conference when mastery of them was checked. If workbooks or other related independent activities were being used, these were also presented. At times, individual assignments which grew out of the child's special interests or a problem he had in the lesson were given. Children were always free to do more than the minimal reading assignment

and very often were motivated to do so.

Teachers often kept a check sheet, card, notebook page, or folder for each child on which a record of material covered was made as well as comments regarding specific strengths weaknesses, and interests. This was brought up to date at each conference. Teachers found this record of conference-by-conference evaluation especially helpful in assessing an individual's progress over time.

Many teachers set aside a day occasionally for whole-class reading activities. This included such things as oral reading of favorite stories, dramatizations, sharing of original stories and poems, and playing word games.

Conduct of Reading Instruction in the Group Instructional Relationship Group

The group instructional relationship was defined as the situation in which formal reading instruction took place in the form of meetings between the teacher and each of two or three ability groupings of children. As was the case with the experimental condition, the control condition of formal grouping for reading instruction was achieved usually after a transition period from a total group reading readiness program of 3 or 4 weeks.

Pupils were grouped for purposes of reading instruction according to teacher's estimates of pupil ability. These estimates were based on tests administered the previous year in kindergarten and on the teacher's observation of pupil performance. The groups, once formed, were quite stable, though children were occasionally shifted from one group to another. Each group met twice a day for 20 to 30 minutes.

The group instructional relationship focused on the use of basal readers. In general, the teachers tended to conform in their instructional method to the teacher's manuals.

All of the classes had room libraries and children were encouraged to read independently. Also, more than half of the classrooms subscribed to a newspaper, The Weekly Reader or The News Pilot.

Independent work was generally limited to related reading activities organized around the workbook accompanying the basal reader. Other workbooks, however, such as phonics, arithmetic, language, and science were

sometimes used. Dittoed sheets, either teacher or commercially prepared, were also frequently employed. Other related activities included coloring, writing, and cutting and pasting.

In half of the classrooms, daily or three times a week, phonics instruction supplemented the reading program. A phonics text (Lippincott or Hay Wingo) and accompanying workbooks were used during a period apart from the reading time. There was no grouping for this instruction. In the other five classrooms, phonics instruction was incorporated within reading instruction.

Collection of Data

Pre-treatment Measures

During the week between the first and second teacher orientation workshops, September 12-19, the experimental edition of the revised Metropolitan Readiness Test, Form A, and the Pintner-Cunningham Primary Test (Pintner General Ability Test), Form A, were administered to all subjects.

Post-treatment Measures

Instruments were selected or designed specifically for each of the five questions which the study was designed to answer. The questions and the instrumentation chosen to answer them were:

1. Will one approach to reading instruction be superior to the other in eliciting changes in reading performance?

   Relevant subtests of the Stanford Achievement Test, Form X, Primary I Battery were used to measure reading performance.

2. Will one approach be superior to the other in developing more favorable attitudes toward reading?

   The project staff created an instrument for this question. The instrument was administered in two parts. Part I asked children to indicate which curriculum activity they preferred in each of a series of pairs of activities which were pictorially represented. Part II asked children to show how

they felt while reading, (a) with the teacher, and (b) by themselves, by marking a pictorially delineated continuum. (See Appendix.)

3. Will children's sociometric choices be less structured around reading success in one approach than in the other?

   Children were asked to name the three other children they would like best as friends and the three children they perceived to be the best readers.

4. Will there be greater school-related anxiety among children in one approach than in the other?

   The Test Anxiety Scale for Children was used to assess anxiety.

5. Will teachers have a more accurate perception of achievement rank of pupils in one approach than in the other?

   Teachers were asked to rank children in order of the performance they would predict for them on the Stanford Achievement Test.

All instruments, both pre- and post-treatment, were administered by members of the research staff. Special briefing and short training sessions were held to coordinate the testing procedures among the six members of the research staff who conducted the testing. All post-treatment were collected within a 10-day period between May 10, and May 20, 1965.

CHAPTER III

ANALYSES AND RESULTS

Pre-treatment Data

Pre-treatment measures were administered to: (a) test the assumption that randomizing procedures had secured approximately equivalent experimental and control treatment groups, and (b) provide a basis for stratified analysis of post-treatment achievement test data.

Equivalence of Groups

A summary of the analyses of data pertaining to group equivalence is presented in Table 1.

TABLE I

PRE-TREATMENT COMPARISON OF GROUP MEANS ON THE METROPOLITAN READINESS TEST AND THE PINTNER-CUNNINGHAM IQ TEST

	Experimental	Control	p[a]
Metropolitan Readiness Test	60.53	58.14	.35 n.s.
Pintner-Cunningham IQ Test	99.84	98.62	.50 n.s.

[a]Cochran-Cox adjusted t

The F test and a Cochran-Cox adjusted t test were applied to the data. The probabilities associated with the t in each case are greater than .05 and tend to substantiate the assumption of equivalence of groups. Application of the F test revealed a significant difference in variance

at the .01 level on the Pintner-Cunningham IQ scores, thus qualifying this assumption.

The use of pre-treatment data as a basis for stratification of achievement scores will be discussed in connection with the results of achievement data reported below.

Post-treatment Data

Reading Achievement

Research Hypothesis. The one-to-one instructional relationship will result in significantly higher reading performance.

Method of Analysis. The Stanford Achievement Test, Form X, Primary I Battery, was used to determine the comparative effects of the two instructional treatments on reading achievement. For this analysis, raw scores for the four subtests dealing with skills relating to reading and the total of these subtests were subjected to t test analysis. The subtests on spelling and arithmetic were disregarded.

Results. Table 2 shows the mean total and subtest scores for the experimental and control groups.

TABLE 2

EXPERIMENTAL AND CONTROL GROUP MEANS ON THE STANFORD ACHIEVEMENT TEST

Test	Group		Significance (t test)
	Experimental	Control	
Word Reading	23.43	23.20	n.s.
Paragraph Meaning	23.67	24.62	n.s.
Vocabulary	22.11	21.90	n.s.
Word Study Skills	37.24	37.40	n.s.
Total	106.79	106.89	n.s.

The use of a t test revealed no significant differences between any of these pairs of means. Thus the answer to the first question posed in the study would seem to be that the groups did not differ significantly with respect to reading achievement. However, because of the somewhat equivocal nature of the equivalence data and because of the possibility of differential effects of instructional treatments on various stratification levels of pupils, the achievement data were stratified separately according to IQ and readiness by dividing subjects into the upper one-sixth, middle two-thirds, and lower one-sixth on each of the two pre-treatment measures. A comparison of means was made. Results of the IQ and readiness stratifications are summarized in Tables 3 and 4.

TABLE 3

EXPERIMENTAL AND CONTROL GROUP MEANS ON THE TOTAL READING SCORES OF THE STANFORD ACHIEVEMENT TEST STRATIFIED ACCORDING TO PINTNER-CUNNINGHAM IQ SCORES

Distribution of Scores	Group		p[a]
	Experimental	Control	
Upper 1/6	131.00	127.68	n.s.
Middle 2/3	105.72	105.58	n.s.
Lower 1/6	76.44	84.34	n.s.

[a]Cochran-Cox adjusted t

It is difficult to arrive at any clear-cut conclusion with respect to these data. The only significant difference in means occurs in the upper group stratified by readiness and shows that the control group did significantly better than the experimental group. But the direction of the difference in the upper group is reversed when the stratification is based on IQ. Again with respect to the upper groups, the control group showed a significantly higher variance than the experimental group when readiness is used as a basis for stratification; but when IQ is used,

the direction of the difference is reversed and the difference does not reach an acceptable level of significance.

TABLE 4

EXPERIMENTAL AND CONTROL GROUP MEANS ON THE TOTAL READING SCORES OF THE STANFORD ACHIEVEMENT TEST STRATIFIED ACCORDING TO METROPOLITAN READING READINESS TOTAL SCORES

Distribution of Scores	Group		p[a]
	Experimental	Control	
Upper 1/6	125.57	136.65	.02
Middle 2/3	105.72	108.58	n.s.
Lower 1/6	76.00	79.71	n.s.

[a]Cochran-Cox adjusted t

There are no significant differences in variance of means for the other four stratified comparisons. Looking at these data descriptively rather than quantitatively, the IQ stratification suggests that the experimental treatment worked well for the brighter students but not as well for the less able ones. This trend is not supported by the readiness stratification which showed that the experimental treatment worked well for the middle group but not for the upper or lower groups.

In summary, the findings with respect to the achievement data are that in general there is no significant difference in the effect of treatment on achievement; but that when subjects were stratified by readiness, the control treatment was more effective than the experimental treatment for the upper stratification group.

Attitude Toward Reading

Part I. The Activity Preference Test

Research Hypothesis. Students in the one-to-one instructional relationship group will have significantly higher and more positive scores on

the reading attitude measure.

Method of Analysis. The Reading Preference Picture Test (see Appendix A, Part I) consists of 10 pairs of pictures, all of which show a pupil at his desk. All pictures are identical except for the activity in which the pupil is engaged. Five different activities are represented in which the reading activity is paired with the activities of writing, number work, construction and drawing. Subjects were asked to mark the one picture in each pair that showed which of the two activities they preferred. On the basis of their choices, the following scores were derived:

1. Reading Preference Score. This score, the primary intent of the instrument, was the number of times reading was chosen in preference to four other common school activities.

2. Writing Preference Score. This score was based on the reasoning that attitudes toward reading might reflect a relationship to attitudes toward writing since both are language operations. The writing preference score was the number of times writing was chosen in preference to four other activities.

3. Academic Preference Score. This score reflected the number of times reading, writing or number work was preferred to construction or drawing.

Group means for these three sets of scores were computed and t tests applied to determine the observed differences in means.

Results. Table 5 summarizes the results of performance on the Reading Preference Picture Test. The data indicate that (1) the experimental group had a significantly greater preference for reading as compared to other school activities than did the control group; (2) writing preference, while showing the same tendency, did not do so to an acceptable level of significance; and (3) academic preference was significantly higher for the experimental than for the control group.

TABLE 5

EXPERIMENTAL AND CONTROL GROUP MEANS ON THE READING PREFERENCE PICTURE TEST

Type of Preference	Group		P
	Experimental	Control	
Reading Preference	2.21	1.97	<.025*
Writing Preference	2.21	2.08	<.10
Academic Preference	3.02	2.74	<.025*

* p = <.05

Part II. The "Faces" Test

Research Hypothesis. Students in the experimental group will show more positive attitudes toward their reading experience.

Method of Analysis. Subjects were asked to indicate, by marking on a curved line continuum between a happy face and a sad face, how they felt about reading. (See Appendix A, Part II.) The task was presented twice--once to show how they felt about reading alone and once to show how they felt about reading with the teacher. Answers were marked on separate sheets. A five-unit grid was placed over the continuum and each child assigned a score of 1, 2, 3, 4, or 5 according to the location of his mark in the grid. A high scaled score was considered "happy."

Examination of the resulting distribution of scores revealed that score categories 2 and 4 combined accounted for only 12 percent of all scores. This suggested the desirability of pooling scores 1 and 2 and scores 4 and 5, thus reducing the data to a nominal scale with three categories, "happy," "unhappy," and "neutral." Collapsing the scale units in this way also seemed appropriate in view of the possible difficulty of the discrimination task being required of first graders.

The "Faces" Test data were analyzed by the application of the Chi square test. The frequency of occurrence of each of the three scoring categories was tabulated for the experimental and control groups' answers to Question 1, "How do you feel when you are reading with your teacher?"

Results. The results of performance on the "Faces" Test are shown in Table 6.

TABLE 6

FREQUENCY OF RESPONSE BY EXPERIMENTAL AND CONTROL GROUPS TO THE QUESTION, "HOW DO YOU FEEL WHEN YOU ARE READING WITH YOUR TEACHER?"

Response Choice	Group			
	Experimental		Control	
Unhappy	0	(4)	9	(5)
Neither	14	(20)	33	(27)
Happy	131	(121)	154	(164)

$X^2 = 11.77$
$p = < .005$, df = 2

These results indicate that the nature of the instructional relationship significantly affected the attitudes of pupils towards reading with their teachers. The experimental group was above expected frequency (shown in parentheses) in its use of the "happy when reading with the teacher" category and below expected frequency in the "neither" and "unhappy" categories. The reverse is true of the control group; it used the "unhappy when reading with the teacher" category more than expected and the "neither" and "happy" categories less than expected.

The same procedure was used for the responses to Question 2, "How do you feel when you read by yourself?" The results appear in Table 7.

These results indicate that type of instructional relationship significantly affected the attitude of pupils towards reading by themselves.

Differences in response to this question are more moderate than those relating to reading with the teacher as the lower level of significance indicates. The differences between observed and expected frequencies for both groups are likewise marginal in the "happy" category. It may be noted with respect to the direction of differences between observed and expected frequencies, that in Question 1 the "neither" category tended to be associated with the "unhappy" category for both groups, whereas in Question 2, the "neither" category tended to be associated with the "happy" category. The data nevertheless strongly suggest that with respect to both reading with the teacher and reading alone, the experimental group had a more favorable attitude than did the control group.

TABLE 7

FREQUENCY OF RESPONSE BY EXPERIMENTAL AND CONTROL GROUPS TO THE QUESTION, "HOW DO YOU FEEL WHEN YOU ARE READING BY YOURSELF?"

Response Choice	Group			
	Experimental		Control	
Unhappy	39	(49)	74	(64)
Neither	37	(28)	27	(36)
Happy	78	(77)	100	(101)

$X^2 = 8.76$
$p = < .01$, $df = 2$

The data for the two questions were next combined in order to derive a three-point nominal scale indicating for each subject whether he (1) preferred to read with the teacher, (2) preferred to read alone, or (3) had no preference. The method for constructing this scale was to compare, for each subject, his score on Question 1 to his score on Question 2. A higher score on Question 1 was construed to indicate a preference for reading with the teacher; a higher score on Question 2 to indicate a preference for reading alone; and a tie to indicate no preference. The

frequencies of the resulting derived scores were tabulated with the results shown in Table 8.

TABLE 8

FREQUENCY OF RESPONSE BY EXPERIMENTAL AND CONTROL GROUPS WHEN CATEGORIZED BY PREFERENCE FOR READING WITH THE TEACHER, READING ALONE, OR HAVING NO PREFERENCE

Preference	Group	
	Experimental	Control
With Teacher	78 (74)	98 (102)
Alone	15 (20)	33 (28)
No Preference	52 (51)	68 (69)

$X^2 = 2.80$
$p = < .25$, $df = 2$

Differences between the instructional groups on this basis of categorization do not reach an acceptable level of significance. It is worth noting, however, that the differences between the experimental and control groups are marginal with respect to the "no preference" category and appear to be systematic with respect to the other categories.

A further analysis was therefore made in which the pupils with no preference were eliminated. The observed frequencies for the remaining two categories are necessarily the same as those in Table 8. In this analysis $p = < .05 > .10$, $X^2 = 2.72$, $df = 1$. While the level of significance here is not high enough to permit rejection of the null hypothesis, it does warrant notice of the direction of differences for, in the experimental group the frequency of preference for reading with the teacher was above the expected frequency, while that for reading alone was below expectation. For the control group, the reverse is the case--reading with the teacher was below expectation and reading alone was above expectation. This suggests the tentative interpretation that the experimental treatment

elicited a more favorable attitude towards reading with the teacher while the control treatment elicited a more favorable attitude towards reading alone.

Reliability of Reading Attitude Measures. There are no reliability data available on the Reading Preference Picture Test. The "Faces" Test was administered a second time to our population sample as part of our regular testing protocol. The time between first and second administrations varied from 4 to 7 days. Agreement for all subjects between the first and second administration was 66.36 percent.

Summary of Attitudes Toward Reading. The above findings suggest, in answer to the second major question posed in the study, that the experimental treatment elicited a more favorable attitude towards reading than did the control treatment with respect to reading preference, academic preference, and reading with the teacher. The data also indicate that writing preference was also higher for the experimental than for the control group, but not at an acceptable level of significance.

Sociometric Choice Patterns

Research Hypothesis. Pupils in the experimental group will be less affected in their choice of friends by knowledge of their friends' reading ability than will those in the control group.

Analyses and Results. To determine the comparative effects of the two treatments upon the degree to which sociometric choices are structured around reading success, pupils were asked to name the three children in the class they would like most to have as friends, and to name the three children in the class they thought were the best readers. The resulting data were analyzed several ways.

1. The most direct approach to the research hypothesis was to analyze the number of "mutual choices" occurring in the two groups. A "mutual choice" was defined as an instance in which a pupil was selected for both "friend" and "best reader" categories by another child. Each pupil was then assigned a "mutual choices received" score which was the quotient

of the number of mutual choices he received divided by the number of possible choices. The resulting scores were then stratified into three nominal categories of mutual choice--high, middle, and low. The frequency of occurrence of each category was then tabulated and the resulting data treated by Chi square analysis. Table 9 shows the results of this operation.

TABLE 9

FREQUENCY OF HIGH, MIDDLE, AND LOW "MUTUAL CHOICES RECEIVED" SCORES IN EXPERIMENTAL AND CONTROL GROUPS

Frequency	Group			
	Experimental		Control	
High	15	(18)	28	(25)
Middle	8	(19)	37	(26)
Low	142	(128)	159	(178)

$X^2 = 5.75$
$p = < .001$, $df = 2$

These figures suggest that to a highly significant degree, friendship choices are more closely associated with "best reader" choices in the control group than in the experimental group.

2. In responding to the sociometric questions, each child perforce had the option of making from 0 to 3 mutual choices. The second analysis compared the way in which this option was used in the two groups. The frequency with which each of the four possibilities was used in the two groups was tabulated and Chi square analysis applied. The results appear in Table 10.

These results do not reach an acceptable level of significance. At the descriptive level, however, there was a trend to use a larger number of mutual choices in the control than in the experimental group, and there was a greater tendency to use a smaller number of mutual choices in the

experimental than in the control group. This tendency would support the conclusion reached above that friendship choices are more closely associated with "best reader" choices in the control than in the experimental group.

TABLE 10

FREQUENCY OF MUTUAL "BEST READER" AND "BEST FRIEND" CHOICES BY EXPERIMENTAL AND CONTROL GROUPS

Number of Mutual Choices	Group			
	Experimental		Control	
0	71	(67)	83	(87)
1	64	(62)	77	(79)
2	30	(32)	44	(41)
3	3	(7)	12	(8)

$\chi^2 = 5.75$
$p = < .07$, $df = 3$

3. The two preceding analyses dealt with the relationship between friendship choices and pupils' perceptions of the best readers. The following analysis, however, compares the two groups with respect to the accuracy of their "best reader" perceptions, accuracy being defined as agreement between "best reader" rank and actual rank on the Stanford Achievement Test. The three highest scorers on the Stanford Achievement Test and the three subjects receiving the highest number of "best reader" choices were compared for each class, and the number of agreements were tabulated. The mean number of agreements per class was then computed for the two groups and the difference in means evaluated with a t test. The mean for the experimental group was slightly higher than the mean for the control group, but not significantly so. The operation was repeated with the top quartile rather than the top three, and this time the control group was higher than the experimental group. Again, the differences

were not significant. Thus, the pupils in the two instructional groups did not differ significantly in their perception of "best readers."

4. The same method was used to analyze the differences between the two groups with respect to agreement between "friendship choices" rank and achievement rank. There were no significant differences between the groups.

5. The final sociometric analysis involved an examination of the differences between the instructional groups with respect to the distribution of friendship choices. A score was computed for each pupil which was equal to the number of "best friend" choices he had received, divided by the number of such choices it was possible for him to receive. Pupils were then stratified into high, middle, and low score ranges, and the frequency of occurrence within each range tabulated for experimental and control groups and subjected to Chi square analysis. These data appear in Table 11.

TABLE 11

FREQUENCY OF SOCIOMETRIC CHOICES BY EXPERIMENTAL AND CONTROL GROUPS FOR THREE FRIENDSHIP-CHOICE SCORE RANGES

Range	Group			
	Experimental		Control	
Low	113	(106)	120	(127)
Middle	49	(43)	46	(52)
High	30	(42)	63	(51)

$X^2 = 8.82$
$p = < .01$, $df = 2$

These data indicate that the type of instructional relationship had significantly different effects on the distribution of friendship choices. Choices were more evenly distributed in the experimental group than in the control group. There was a larger frequency of high scores than expected

in the control group and smaller frequency than expected in the experimental group. With the bulk of the scores falling into the "low" category, the differences between observed and expected frequencies in this category account for a very small portion of the significance of the Chi square value of 8.82, and thus are marginal in their implications.

Summary of Sociometric Analyses. The data suggest that sociometric choices were more closely associated with reading success in the control group than in the experimental group. There was a greater tendency for "mutual choices" to occur in the control group, and friendship choices tended to be more concentrated on fewer people in the control group. Some descriptive findings that did not achieve an adequate level of statistical significance tended to support this conclusion. The findings as a whole lend support to the essence of the research hypothesis that pupils in the experimental group would be more catholic in their choices of friends and less influenced by knowing how well their friends read.

School-Related Anxiety

Research Hypothesis. Students in the experimental group will show less school-related anxiety.

Results. Sarason's Test Anxiety Scale for Children (TASC) was administered as the measure of school-related anxiety. The questions on the test were read to the pupils who circled "yes" or "no" on a separate sheet. Raw scores were tabulated and means for the experimental and control groups computed. The mean score for the experimental group was 12.19 and for the control group, 11.46. These differences are not significant. The conclusion must be drawn that type of instruction context was not significantly related to school-related anxiety as measured by the TASC.

Teachers' Predictions of Pupil Achievement Ranks

Research Hypothesis. Teachers in the experimental group will judge their pupils' progress more accurately.

Results. A Spearman rank order correlation was computed between achievement ranks and teachers' predicted ranks for each class. The resulting correlations were transformed to z scores and a mean z score computed for each group. By dividing the difference between these z scores by the standard error of the difference between them a "unit-normal-curve" deviate was computed. The values of such a deviate required for a given level of significance are known. In this instance, the value of the deviate did not reach an acceptable level of significance. The null hypothesis, that there is no difference between the ability of the teachers in the two groups to predict achievement ranks of their pupils, cannot be rejected.

In the process of making the above analysis, the Spearman rank order correlation was computed separately for each teacher. It is worth noting that each of these reliability coefficients was found to be significant at the .01 level, suggesting the pleasing, if somewhat serendipidous, finding that the teachers in both groups were quite accurate in predicting comparative achievement levels of their pupils. The Spearman rank order reliability coefficients for all teachers in the study are shown in Table 12.

TABLE 12

SPEARMAN RANK ORDER COEFFICIENTS OF RELIABILITY FOR EACH TEACHER ON HER RANKING OF PUPIL READING ACHIEVEMENT AND THAT ON THE STANFORD ACHIEVEMENT TEST

Experimental Group		Control Group	
Teacher	r^a	Teacher	r^a
1	.87	1	.92
2	.93	2	.93
3	.93	3	.62
4	.93	4	.88
5	.82	5	.93
6	.78	6	.90
7	.63	7	.97
		8	.88
		9	.85
		10	.87

[a]All coefficients significant at or beyond the .01 level.

The conclusion to be drawn from these data is that the teachers in the two groups did not differ in their ability to predict achievement ranks of their pupils. It was observed that the ability of each teacher to predict the reading achievement of her pupils on a standardized reading test was significant at the .01 level.

Summary of Analyses

In very general terms, the findings of this study may be summarized as follows:

1. The one-to-one instructional relationship and the group instructional relationship were found to be equally effective in developing reading achievement.

2. The one-to-one instructional relationship was found to be superior to the group instructional relationship in developing favorable attitudes towards reading.

3. Children's friendship choices were less structured around reading success in the one-to-one instructional relationship, and hence more catholic, than they were in the group instructional relationship.

4. The two groups did not differ with respect to school-related anxiety.

5. The teachers in the two groups did not differ in the accuracy of their perceptions of pupils' achievement ranks on a standardized reading test.

CHAPTER IV

SUMMARY, CONCLUSIONS AND IMPLICATIONS

Summary

This study was designed to examine the relationship of two patterns of teacher-pupil instructional relationship, the one-to-one versus small group instruction in beginning reading, to the reading achievement, school-related attitudes, sociometric choices, and school-related anxiety of the pupils, and to the teacher awareness of the reading achievement of their pupils.

Ten experimental and ten control groups were randomly selected from a total population pool of 30 East and West Dane County, Wisconsin, first grade classrooms representing predominantly a non-metropolitan background. Minor adjustments in the sample were made under local administrative advisement in relation to specific factors such as teacher illness, qualification, etc. All classes in each group were heterogeneously grouped. Three teachers from the experimental group withdrew from the experiment before it was completed.

Pre-test equivalence data on the Metropolitan Readiness and the Pintner-Cunningham tests were collected at the beginning of the school year. The two groups were judged to be equivalent by use of a Cochran-Cox adjusted t test, with the qualification that significant variance existed on the F score on the Pintner-Cunningham Test.

The teachers in both groups attended workshops intended to develop their teaching knowledge and skill in the procedure they used. Continuous consultant help throughout the year was provided both groups.

The experimental treatment consisted of the use of a conference (one-to-one) procedure for most teacher-pupil reading instruction. The control group utilized the traditional basal reading three-group procedure. Both groups utilized basal reader materials for instruction.

At the end of the first grade year, measures of pupil reading achievement, pupil attitude toward reading, pupil sociometric choices, pupil school-related anxiety, and teacher knowledge of pupil achievement were collected.

The general results of the study indicated that no significant differences existed between the instructional groups in pupil reading achievement, pupil school-related anxiety or teacher knowledge of pupil achievement. Significant differences favoring the experimental group were found on measures of pupil attitude toward reading and on the pattern of pupil friendship choices.

Conclusions

Since the variations in pupil-teacher relationships examined in this study were significantly related to personal preferences and social choices of pupils; we may conclude that the one-to-one instructional relationship is characterized by more positive attitudes and more desirable patterns of social choices than the group instructional relationship. There are, however, apparently no identifiable relationships between the variations in teacher-pupil relationships and pupil achievement, test anxiety, and teacher knowledge of pupil progress.

Limitations of the Study

These conclusions must be qualified by the dimensions and limitations inherent in the design and procedures. The initial population of the study consisted essentially of pupils in a non-metropolitan, midwestern, small town-rural circumstances. The nature of the sample drawn is reflected by the average to low-average means on the pre-measures of IQ and readiness.

The sampling procedure, though based upon an initial randomized process, was modified in the case of two original selections by administrative decision. Further, shortly after the beginning of the study, three of the original ten experimental group teachers withdrew from the study. The remaining experimental teachers are best described as volunteers within a random selection. The precise effect of these circumstances on the results of the study are unknown.

Furthermore, data on the pupil attitude measures are based upon instruments which have logical and content validity, but which need further evidence as to reliability.

The experimental treatment was also not completely consistent among the experimental teachers. It was found that all teachers were not ready to begin a complete one-to-one conference procedure at one time. The necessity for moving at different rates meant that the experimental procedure was not completely in operation in all groups until January of the school year. The complete use of the experimental procedure thus ranged from 3 to 7 months within the seven classrooms. Although it is known that a large percentage of the time spent in the experimental classroom involved the use of the experimental procedure, the procedure cannot be said to have had a "pure" and clearly systematic testing.

Within these kinds of limitations, the conclusions mentioned earlier appear to be reasonable.

Implications

The implications of the study are relatively few. An attempt will be made to indicate those which seem most obvious to the investigators and which grow from their total experience with the research project.

Although the research team recognized the potential difficulties in changing the basic teacher-instructional format in beginning reading from a three-group procedure to a one-to-one relationship, it was not realized at the beginning how deeply the roots of the "grouping" format were set in teacher practice. Under the circumstances it appears that the somewhat radical modification of teaching behavior on the part of the experimental teachers was remarkable. The implications of this for the willingness and ability of teachers to change their teaching practices should not go unnoticed. When it is realized that the experimental teachers accepted, developed and consistently applied (although at different rates) a dramatically new procedure to the most basic and time consuming part of their program, it seems to imply clearly that teacher practice can be changed under appropriate conditions.

By the end of the experimental year, four of the seven experimental teachers were enthusiastic about the procedure, two were still willing

but somewhat harassed, and one teacher was obviously relieved to be over with it. A spot check in November of 1965 indicated that three out of six teachers had continued this procedure on their own into the next school year. Two others had combined the conference with grouping and one had returned to a strict grouping procedure. The seventh experimental teacher was not canvassed due to the fact that she was absent from school for several months with illness.

The implications of the results are, of course, tempered by the limitations of the study. Nevertheless, it is at least reasonable to assume that the results imply that the teacher-pupil instructional relationship is more directly related to the personal attitudes and feelings and social perceptions of the pupils in the classroom, rather than their formal achievement in reading. It is further suggested by analogy to the individualized reading study (3) referred to earlier that the achievement variables may be more directly related to the nature and use of the materials themselves, rather than to the relational pattern utilized by the teacher.

A final observation might be that the values tentatively explored in this study are of basic educational significance. How a pupil feels toward the reading activity and how the conditions under which he learns to read influence his relationships to others may well play a vital role in his subsequent success in reading and may indeed influence his lifelong reading habits. The one-to-one instructional relationship explored in this study has diagnostic value for the teacher and therapeutic value for the child. It is a feasible approach. We believe it to be an approach well worth the time and effort of the teacher who hopes to foster in her children a sense of individual worth, recognition and achievement. It is a step, albeit a small one, to emancipate the teacher and the pupil from the bonds of group conformity which so strongly shackle our schools and society today.

APPENDIX

THE READING PREFERENCE PICTURE TEST

Part I: The Activity Preference Test

Test Directions

Here are two pictures. One shows a child at his desk writing. Can you find the picture of the child writing? [Pause; give necessary assistance.] The other picture shows a child at his desk reading. Do you see the picture of the child reading? [Pause; assist if necessary.]

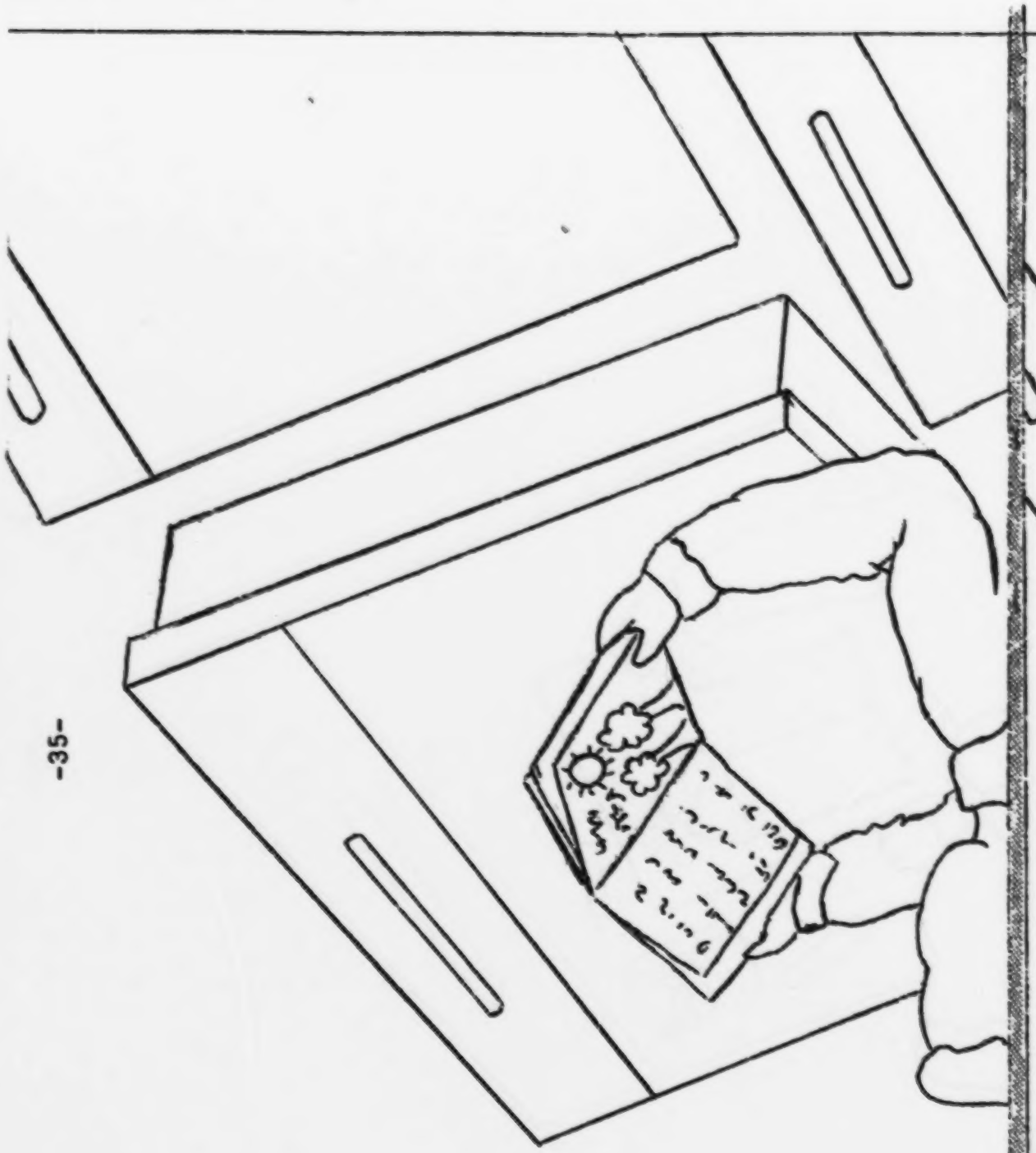
Which of these two things do you like to do best--writing or reading? Don't tell me, but show me by putting a big mark, like this [demonstrate on blackboard], on the picture of the child who is doing what you like to do best. [Pause.]

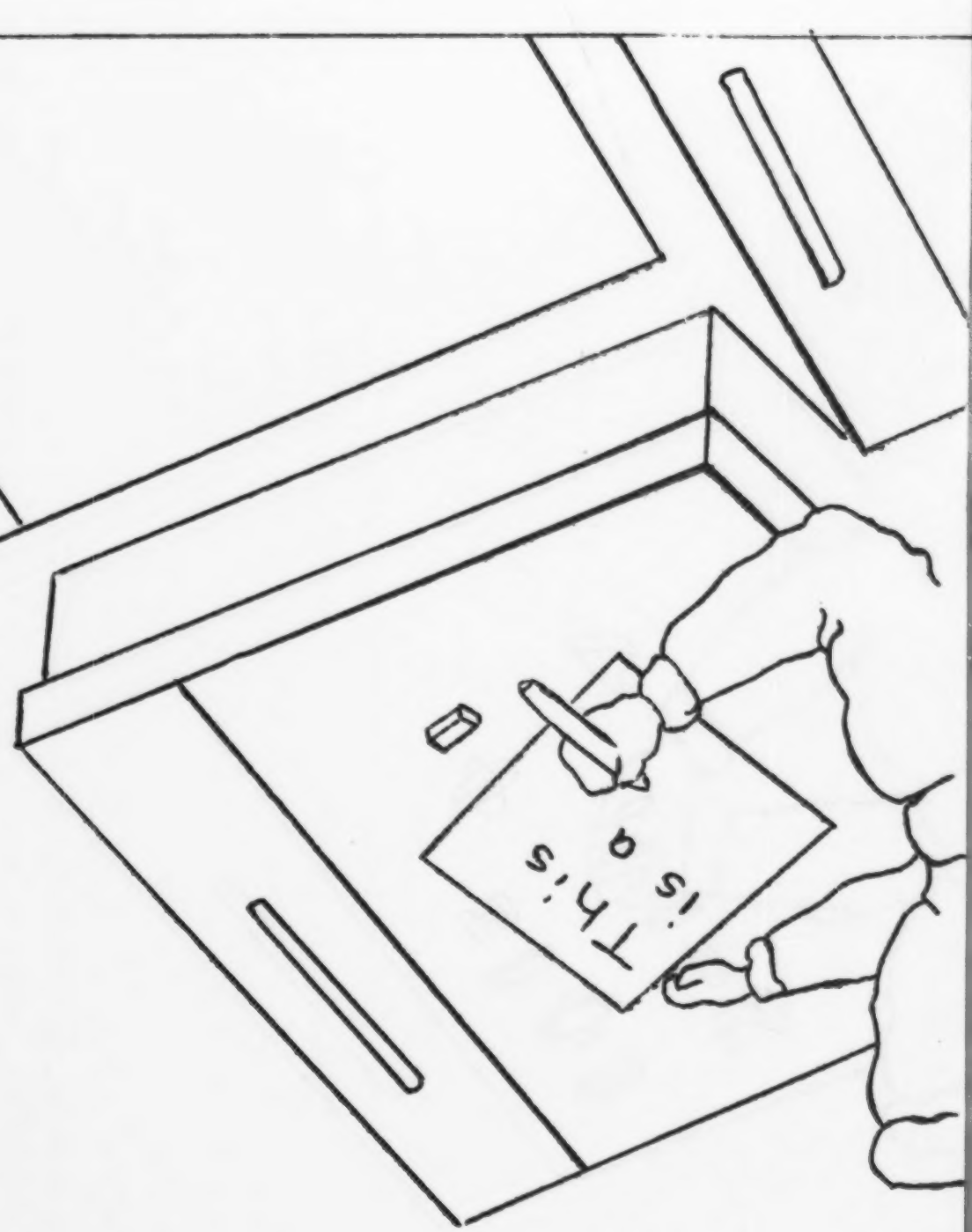
Has everyone marked one of the pictures? [Check; give individual assistance if necessary.]

Now turn to page 3. Be sure you see the number 3 at the top of the page. [Pause.] There are two pictures on this page. One shows a child working with numbers and the other shows a child drawing. Which of these two things do you like to do best--number work or drawing? Show me by putting a mark on the picture of the child who is doing what you like to do best. [Pause.]

Turn to page 4 (5, 6, 7, 8, 9, 10, 11). On this page one picture shows a child __(a)__, and the other picture shows a child __(b)__.

	(a)	(b)
Page 4	reading	doing construction work
Page 5	drawing	doing construction work
Page 6	reading	doing number work
Page 7	writing	drawing
Page 8	doing construction work	doing number work
Page 9	drawing	reading
Page 10	writing	doing number work
Page 11	doing construction work	writing





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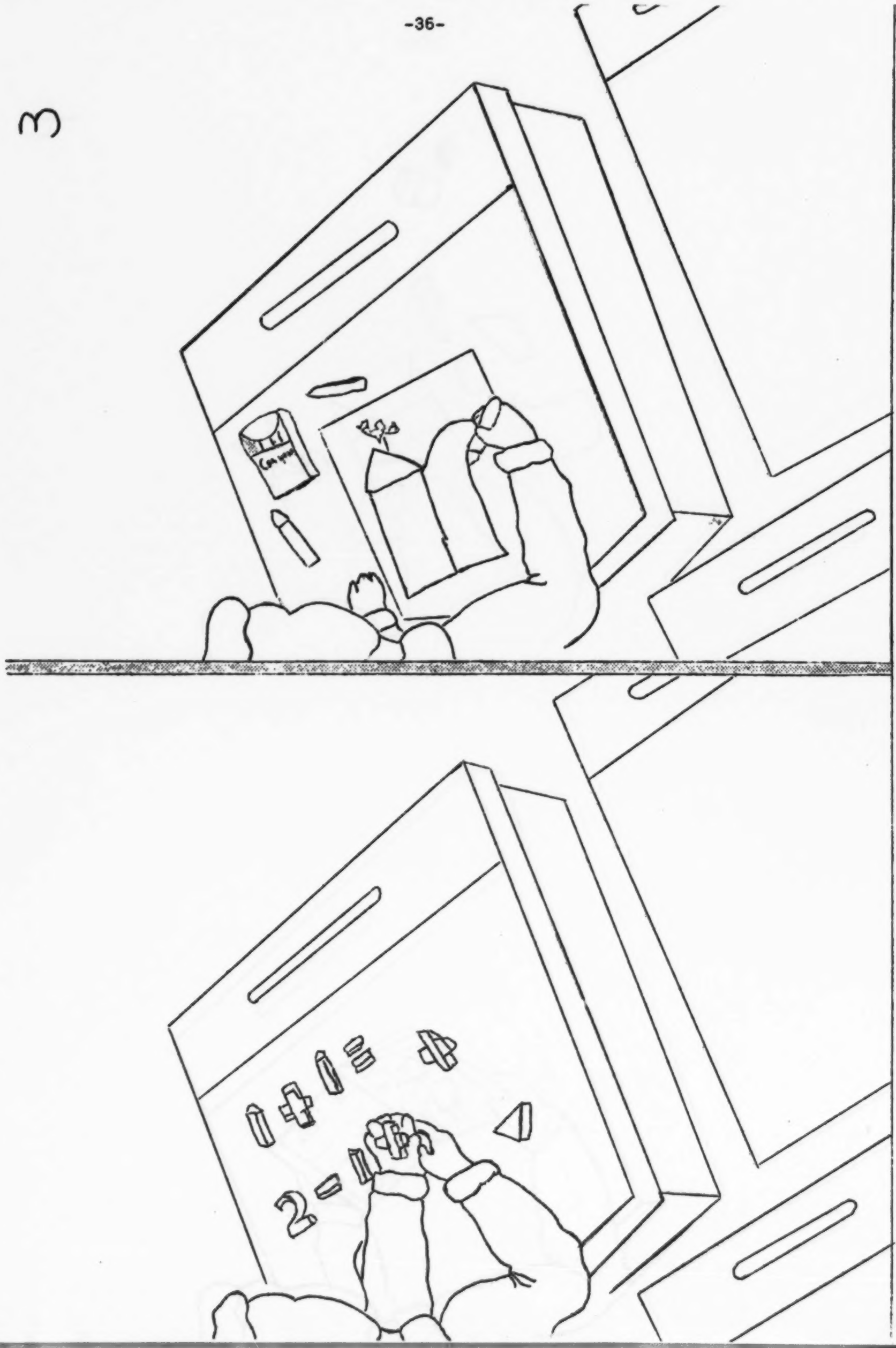

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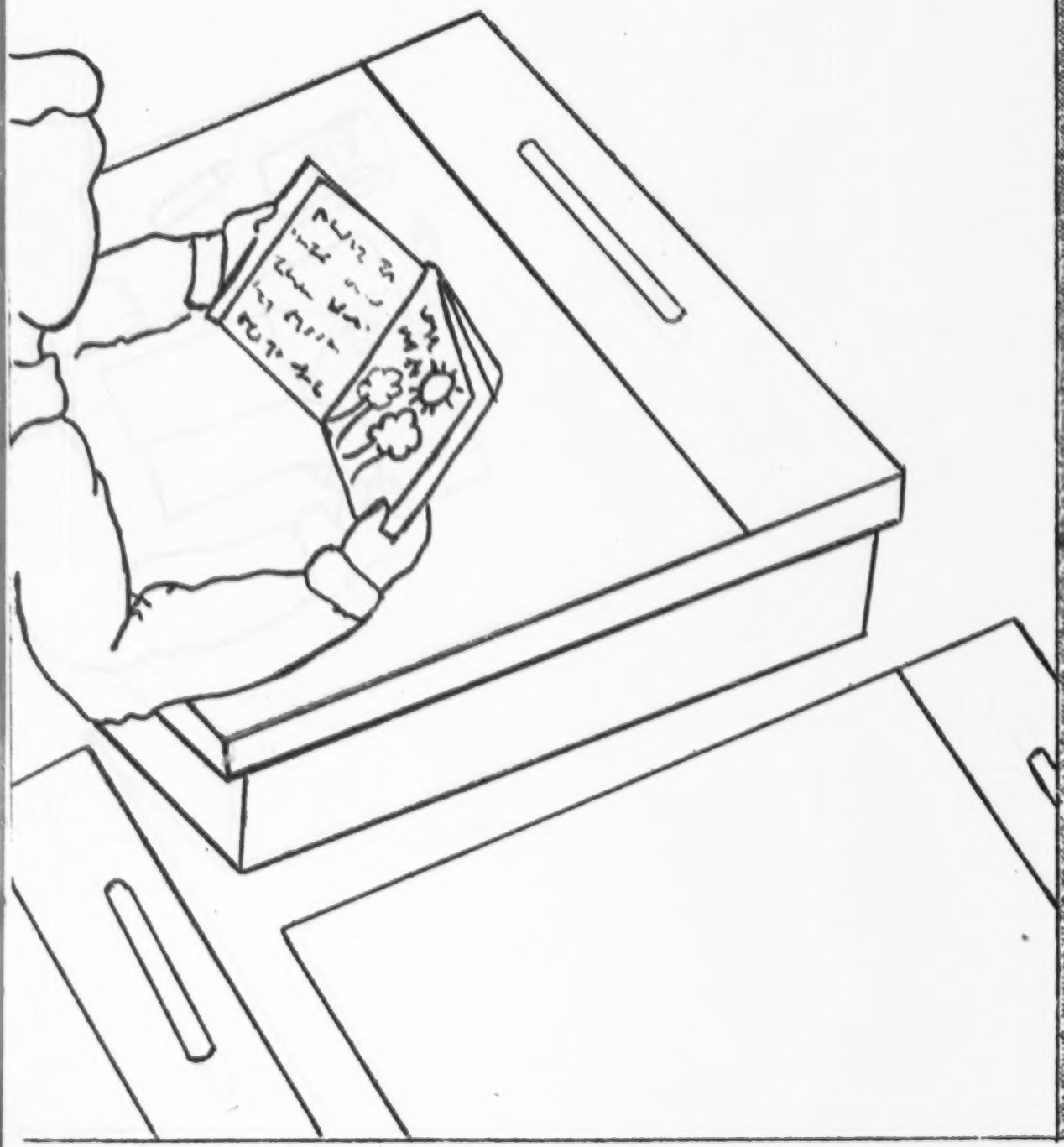

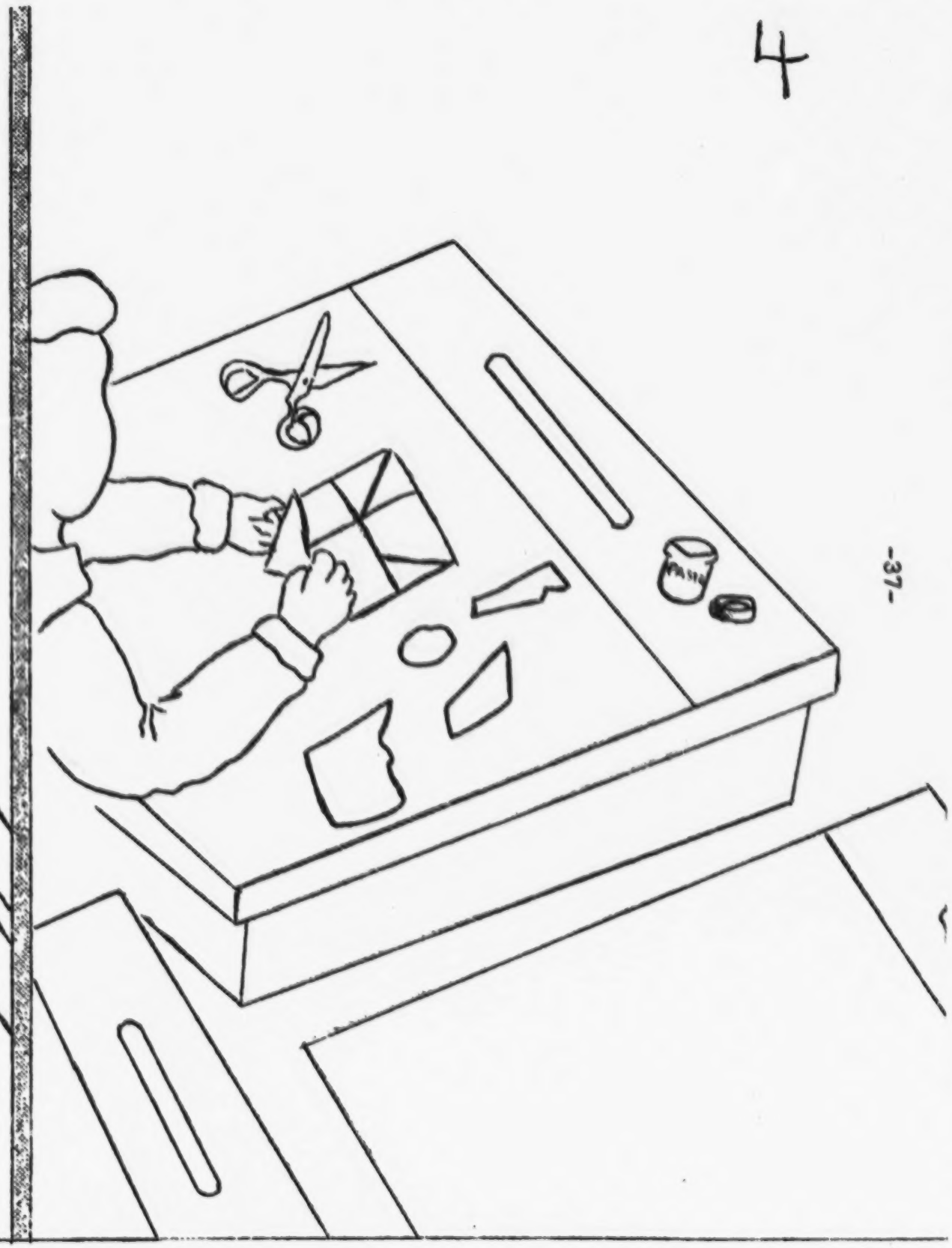

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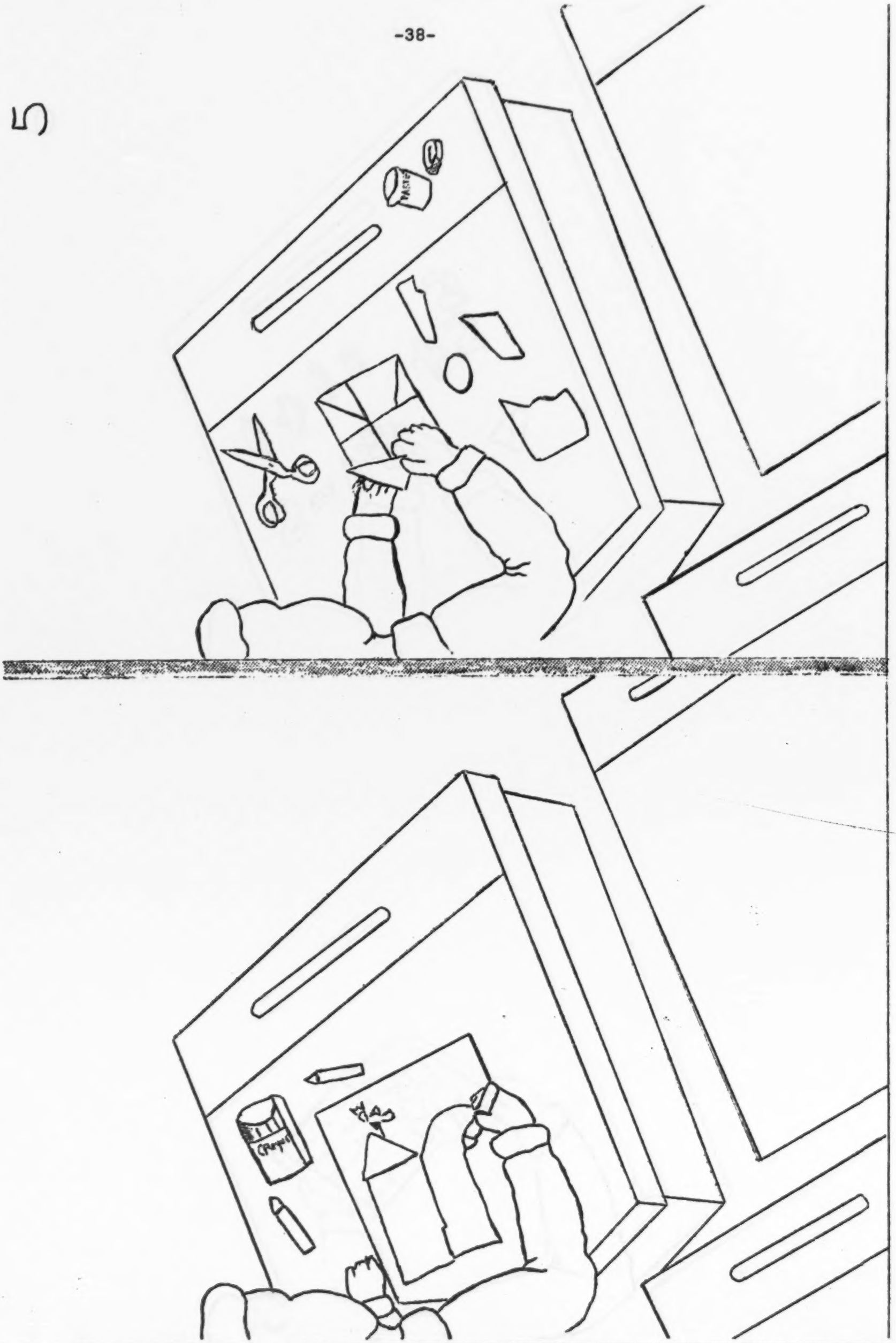

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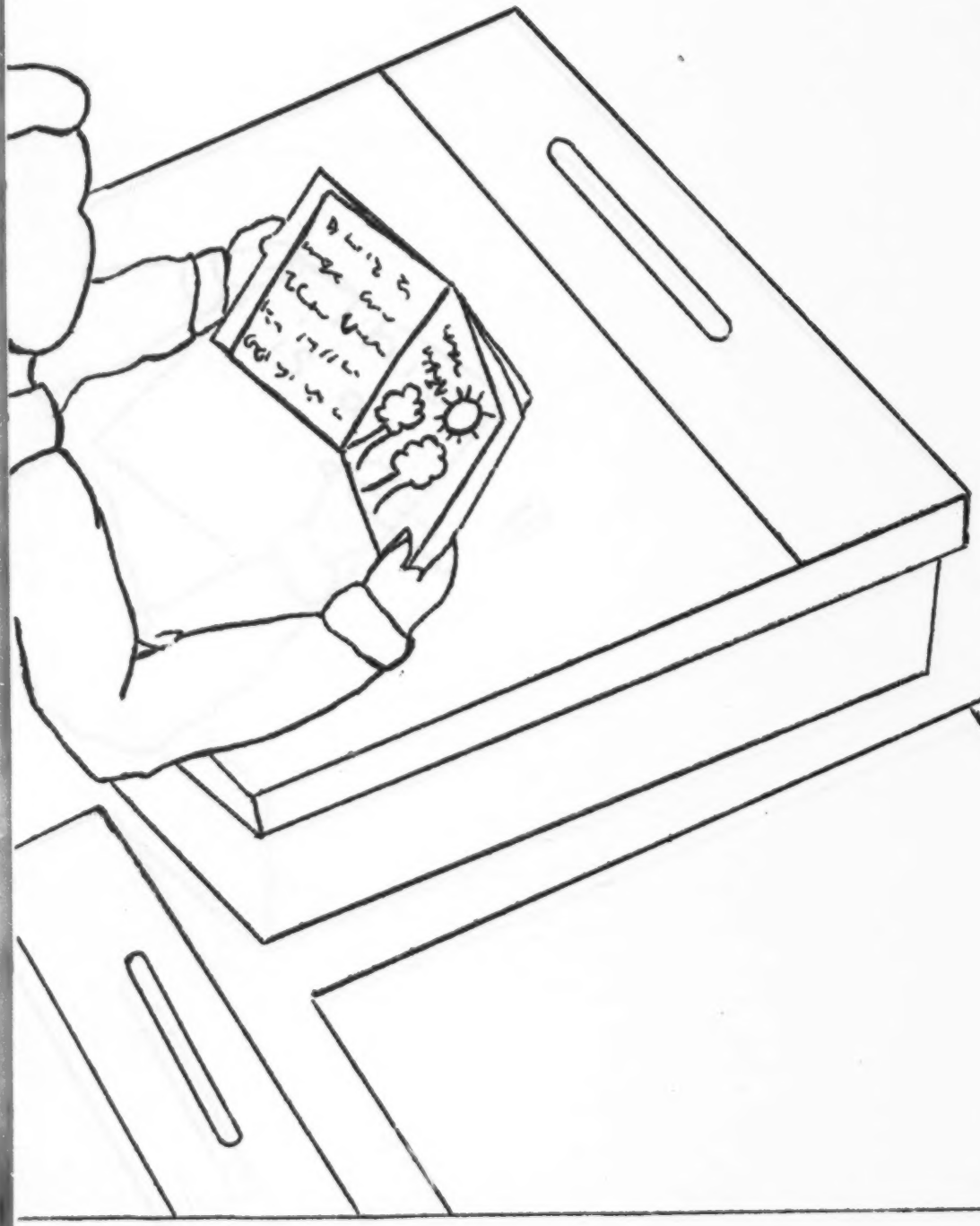

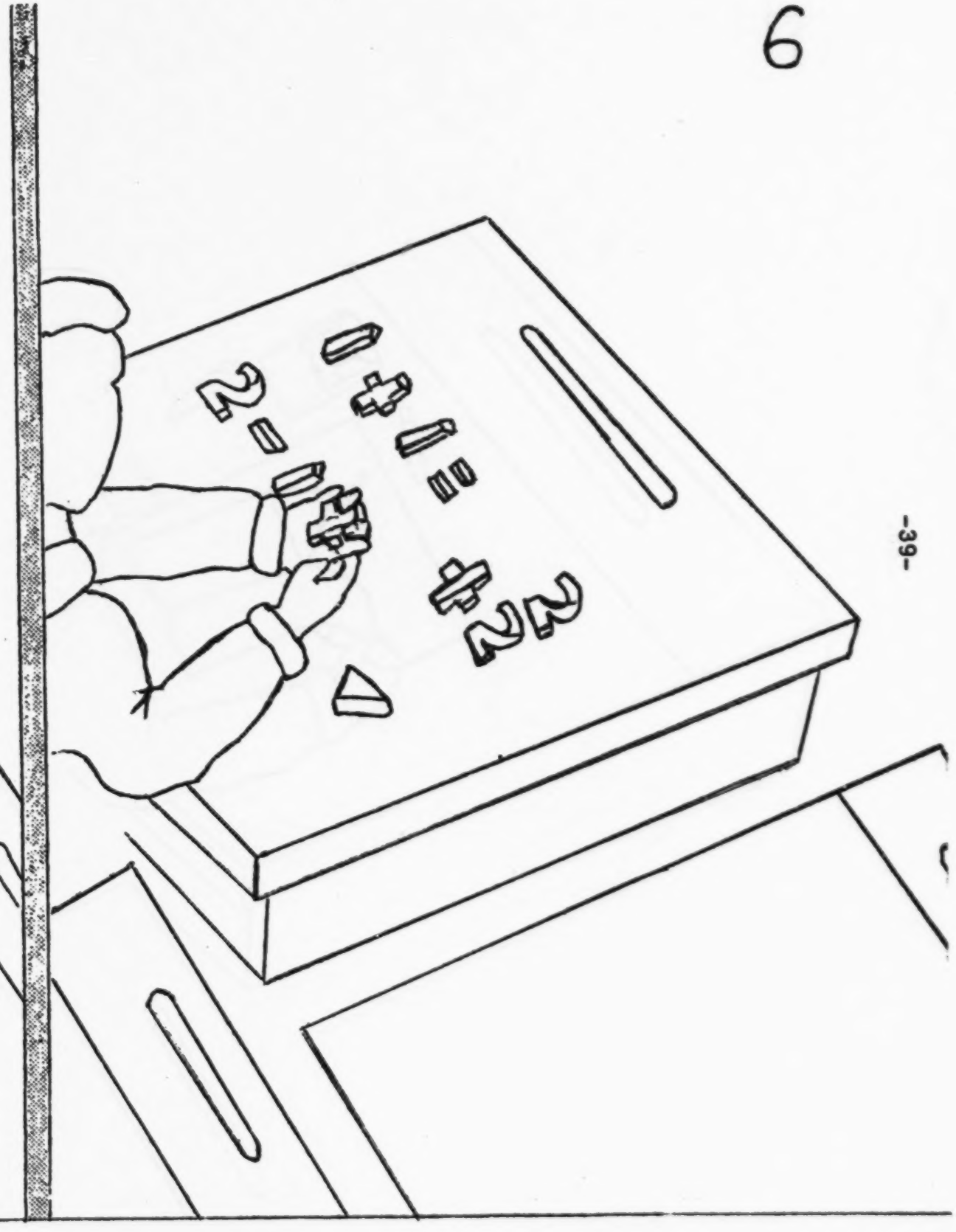

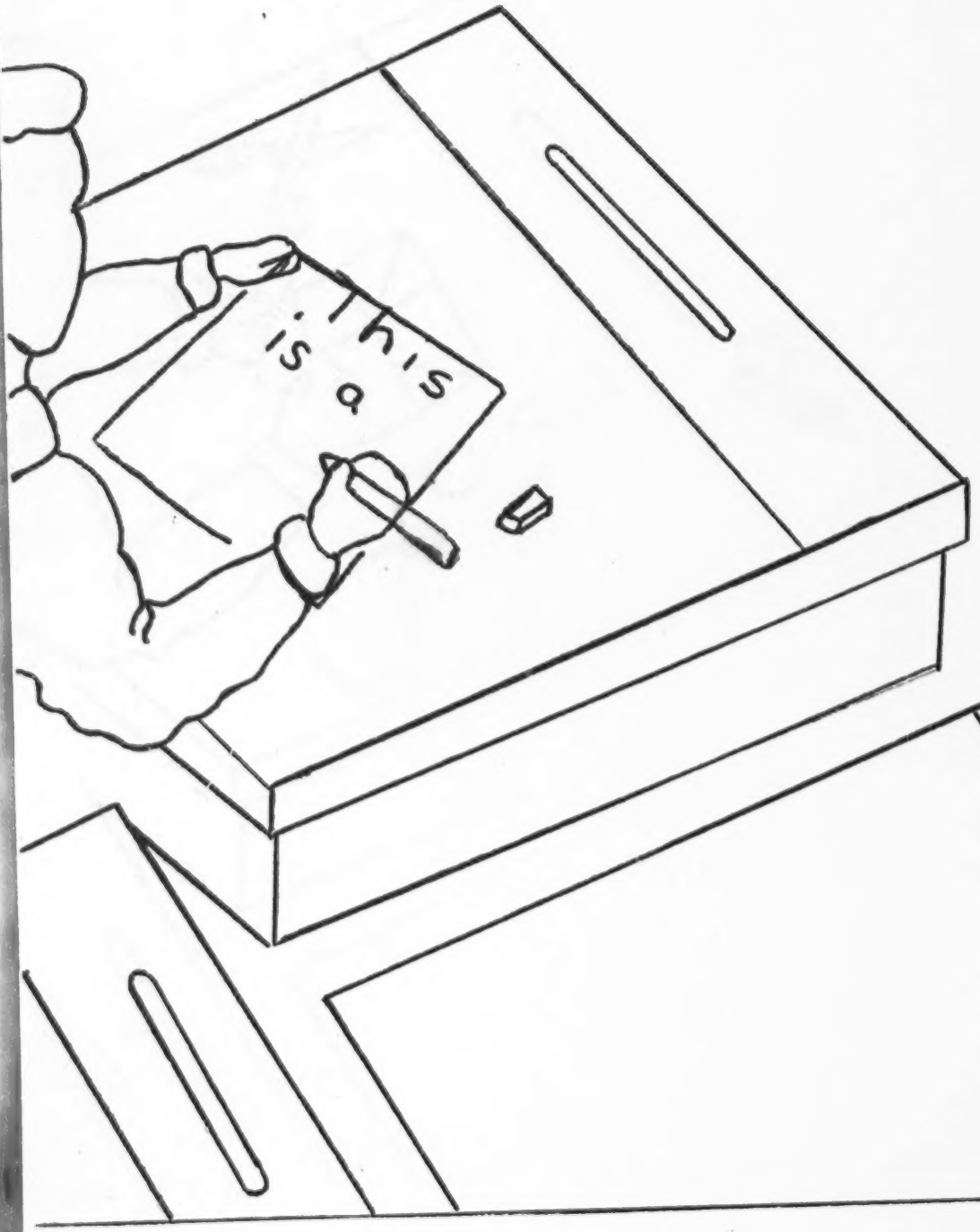
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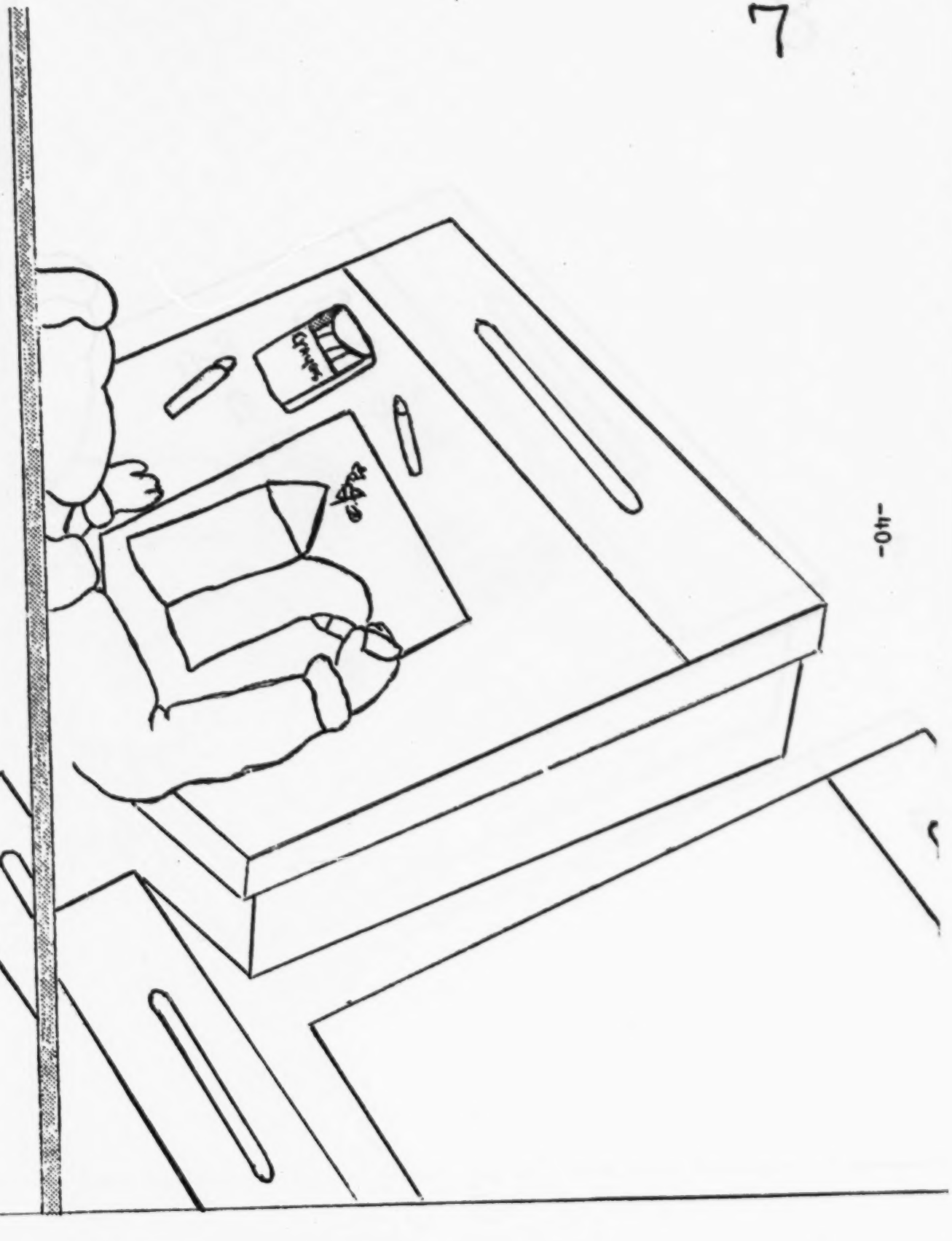
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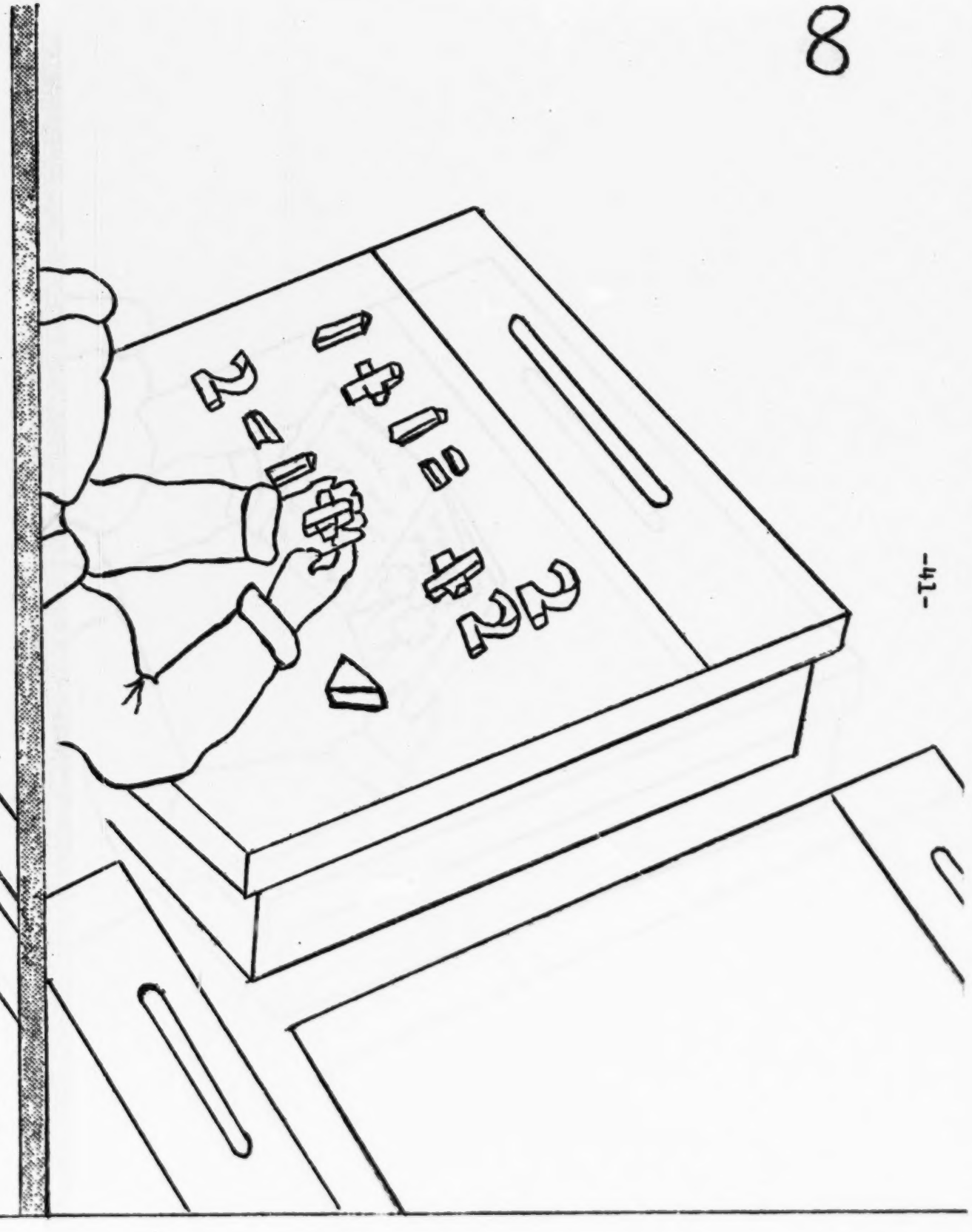

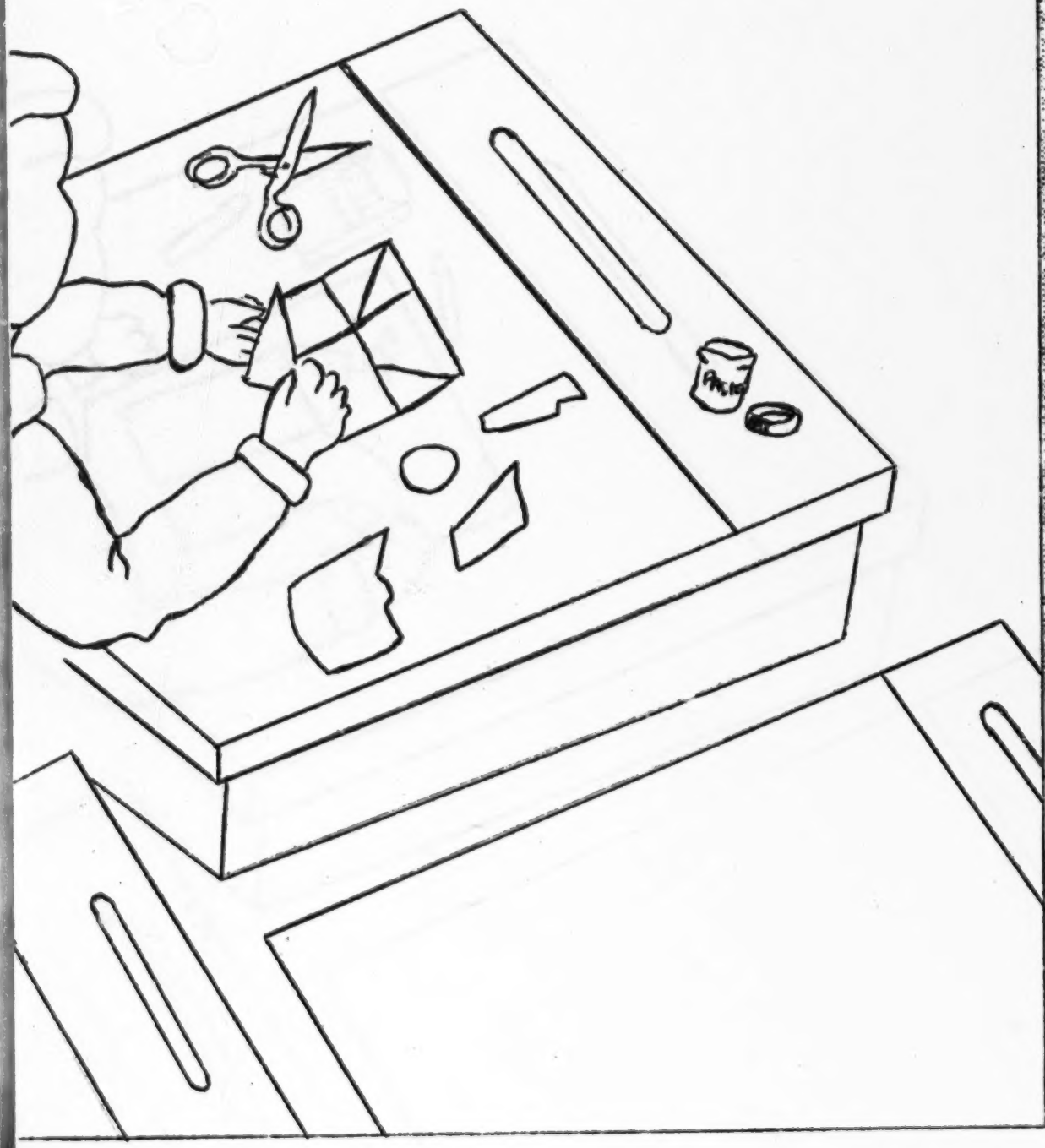

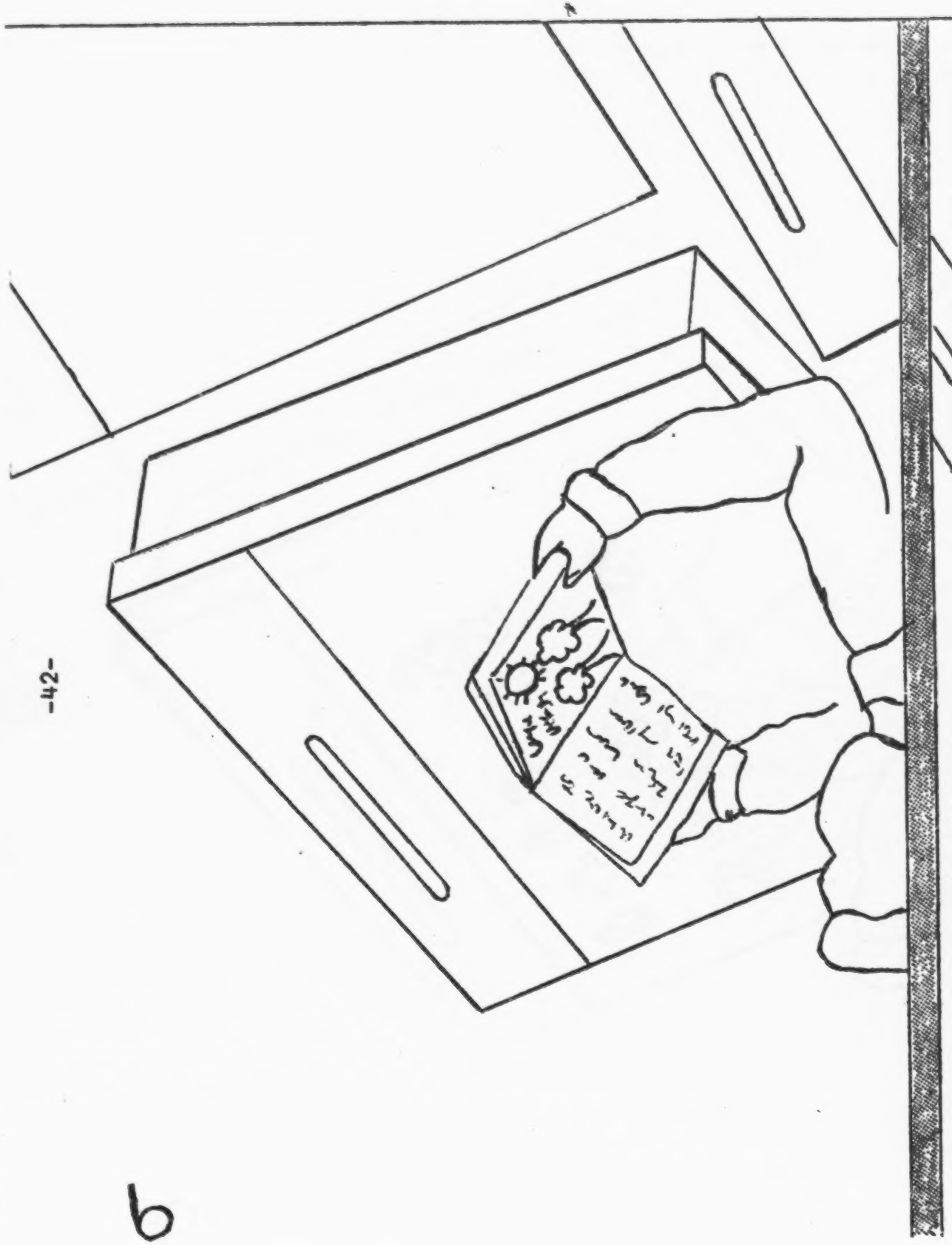

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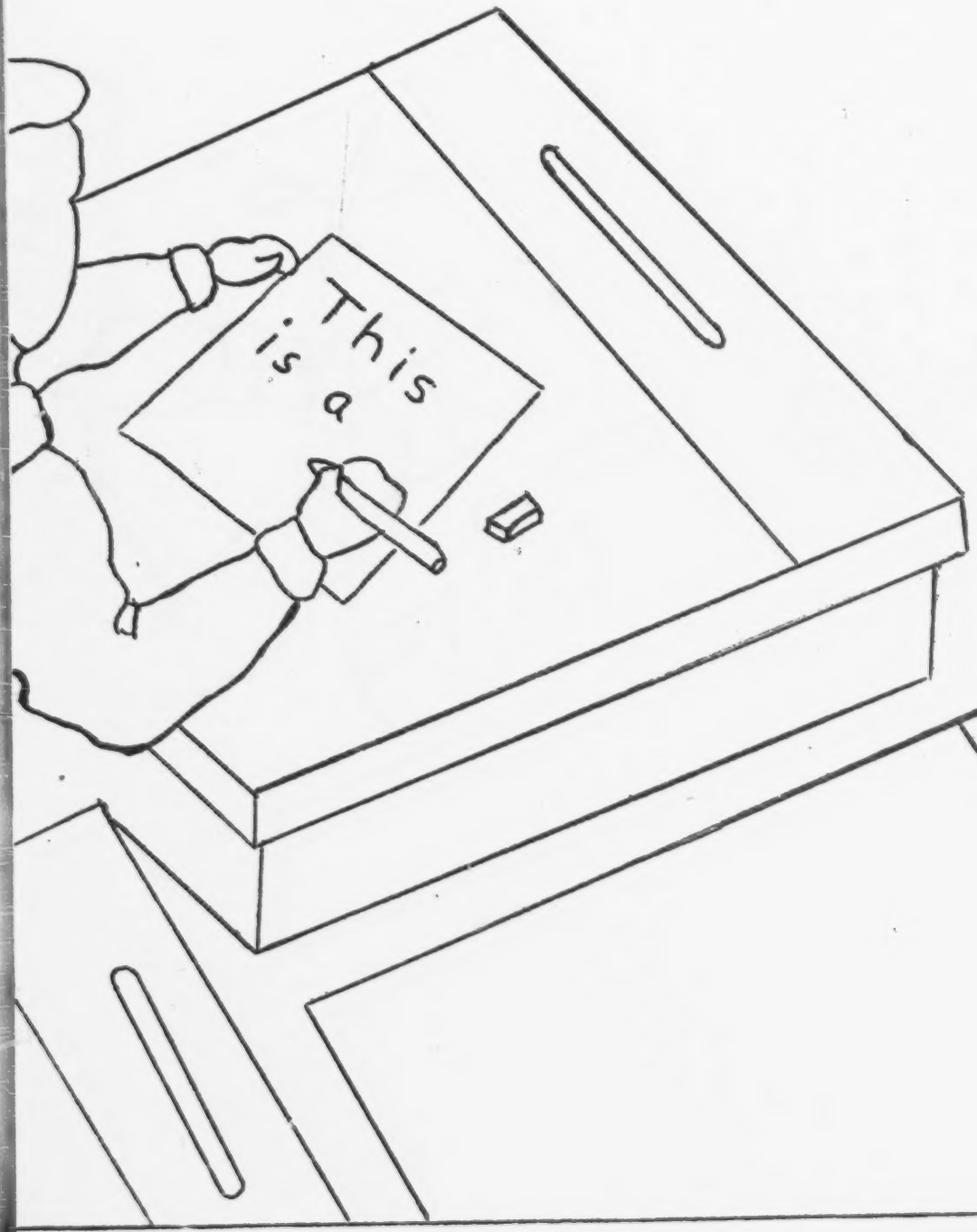
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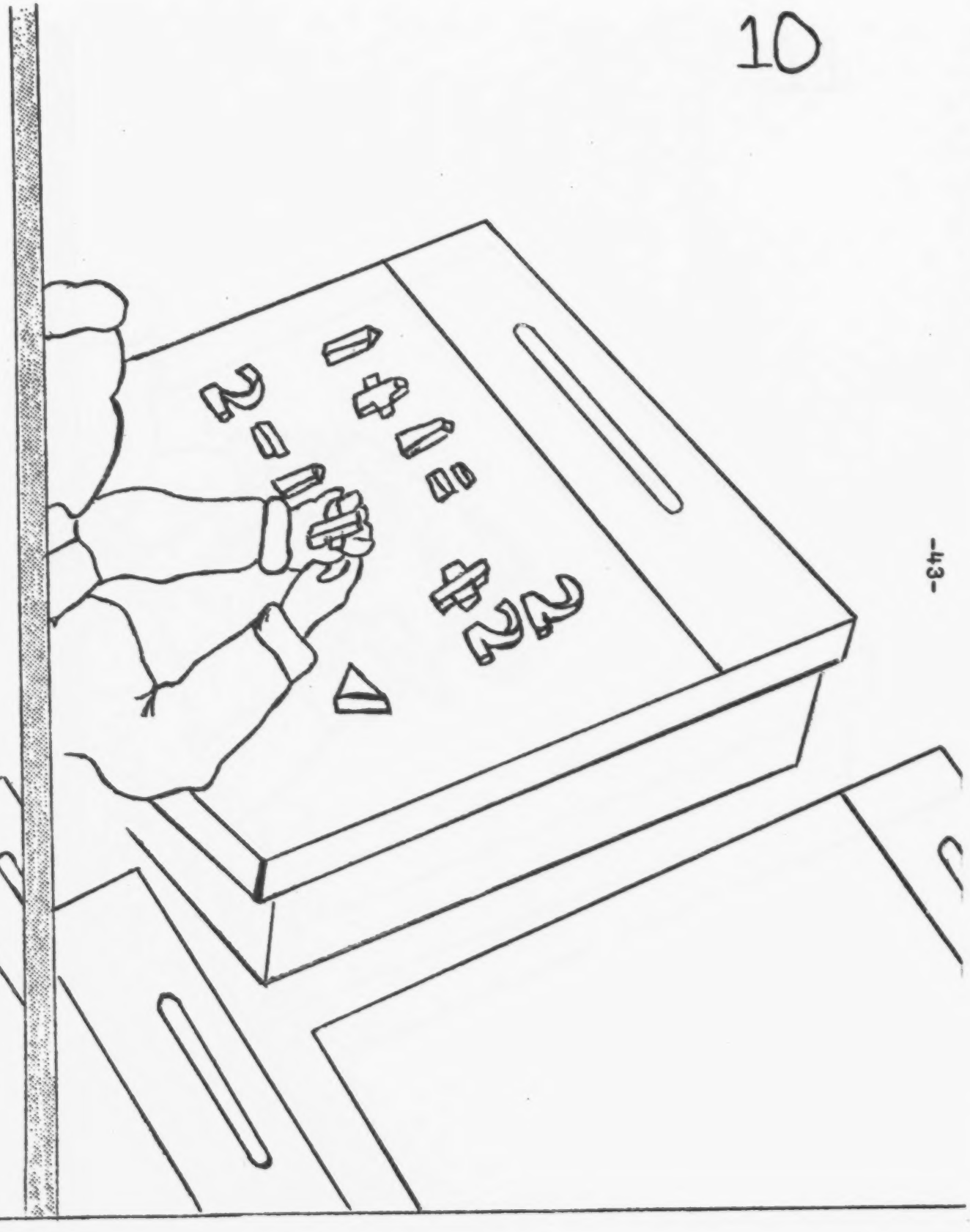
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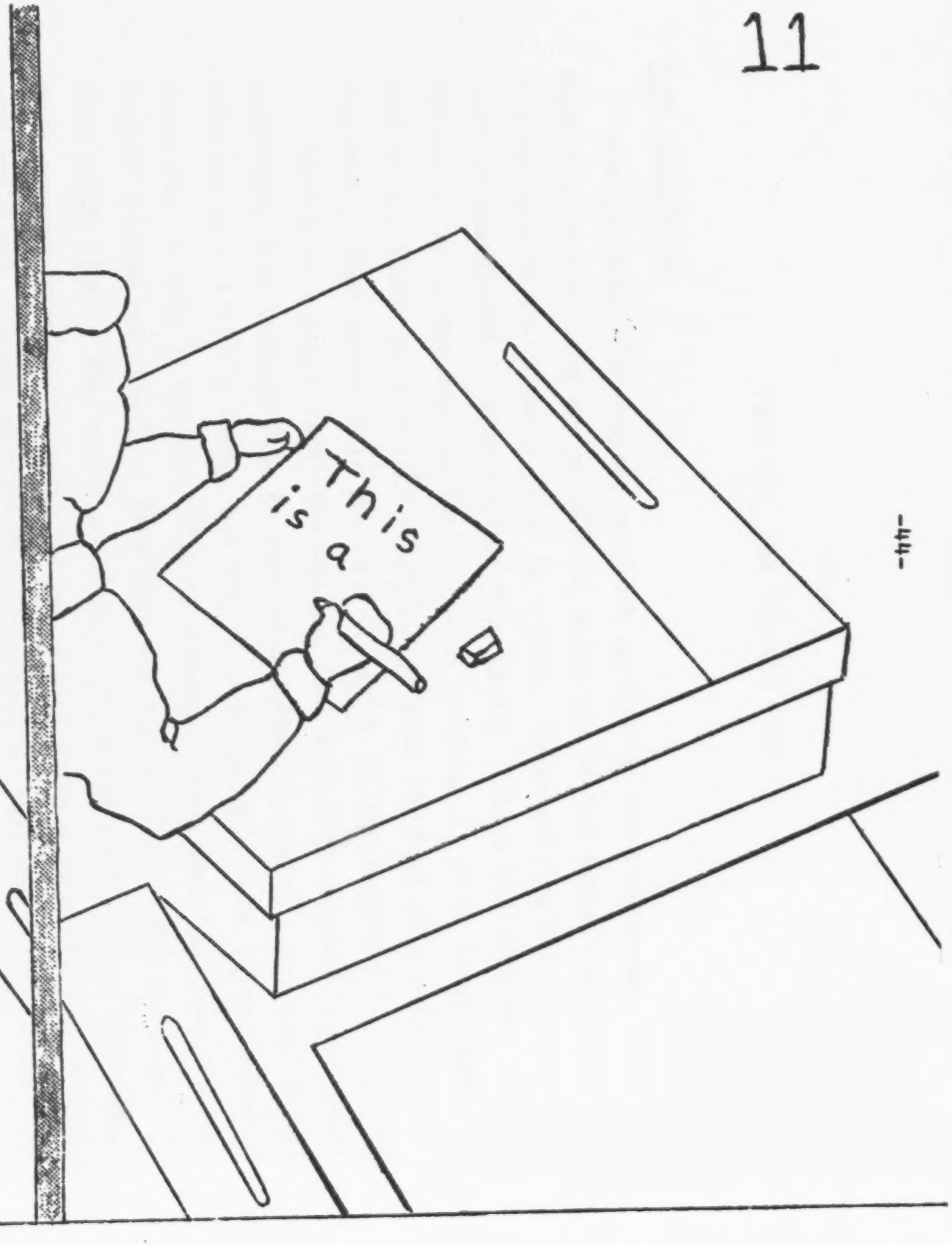

This
is a

Part II: The "Faces" Test

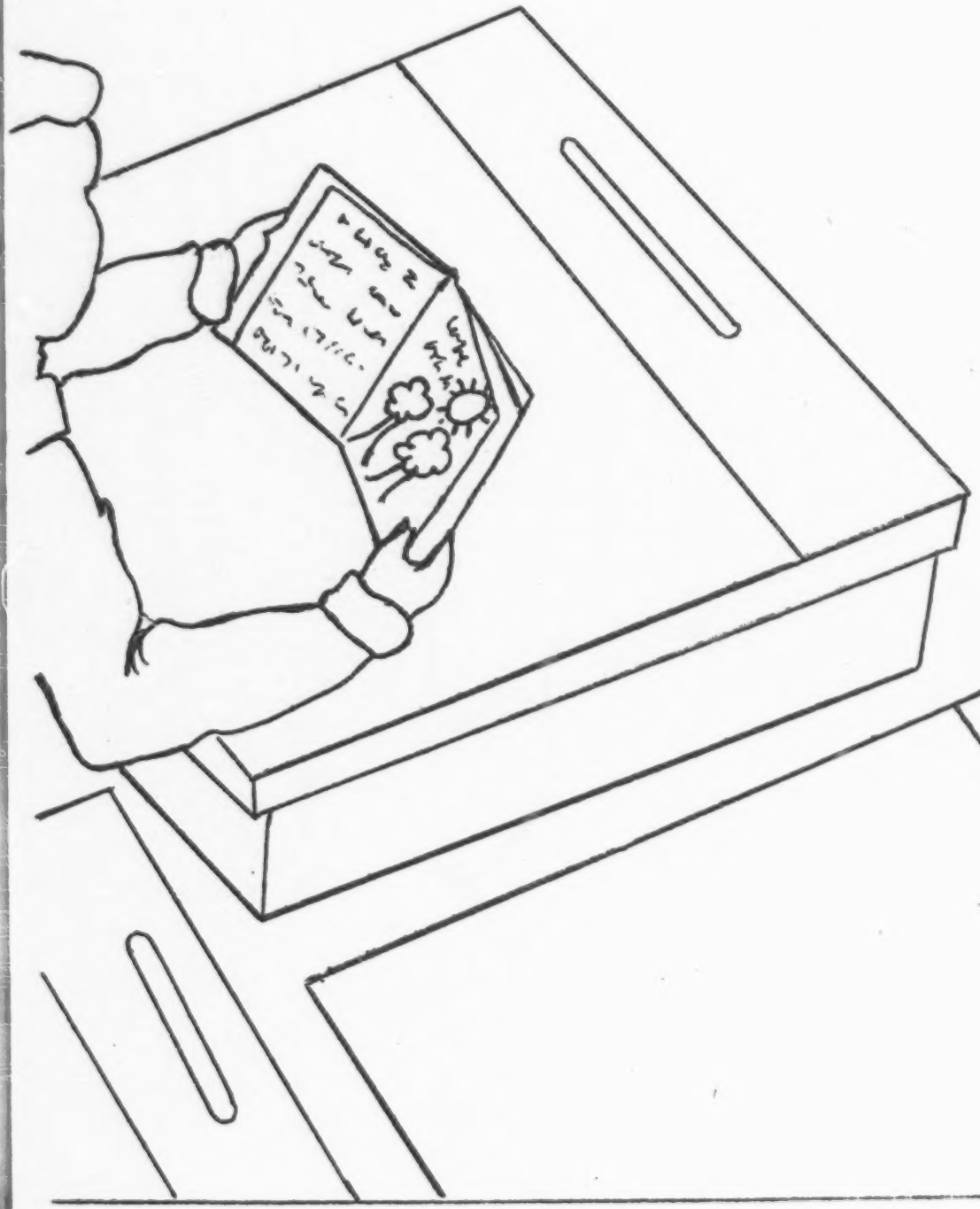
Test Directions

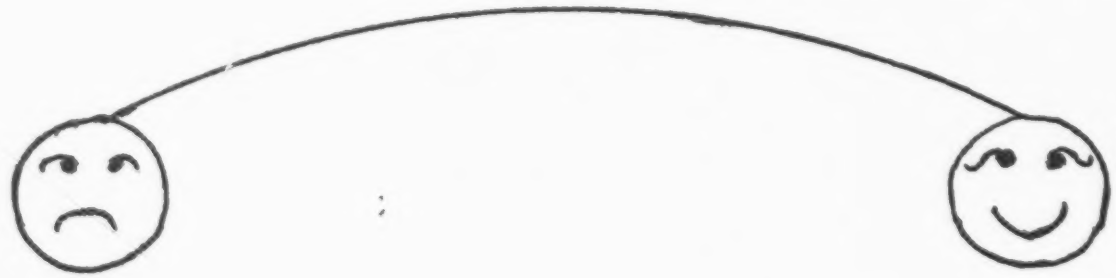
Now put down your crayons and look up here at the blackboard. [The remaining instructions are guidelines which may be "ad-libbed" according to responses of the class.] This is a face. [Draw smiling face towards right of blackboard.] What kind of face is it? [Allow children to respond.] Well, how does he feel? [Allow response.] If he feels happy, what do you think he is doing? What things make you feel this way? [Allow response.] What things make you feel unhappy? [Allow response.]

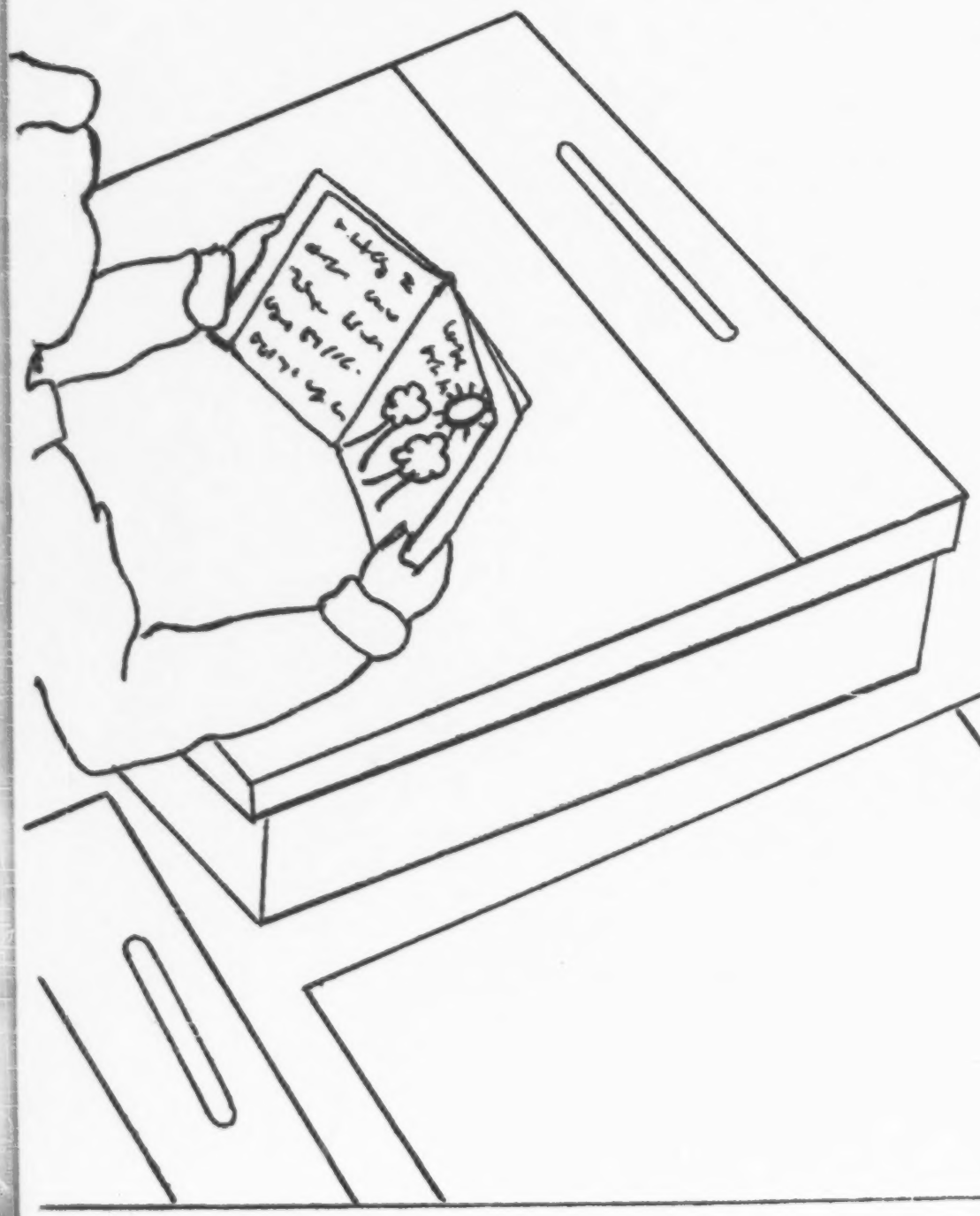
Here's an unhappy face--the way you feel when [use children's previous responses; draw unhappy face to left of blackboard; pause]. Now some things make you feel a little happy, but not as happy as this face. [Draw curve while saying this.] Can you think of something that makes you feel a little happy? [Allow response.] A face that was just a little happy would go here [mark line]. What makes you feel a little bit sad? [Allow response.] Will someone come to the board and put a mark where a face that was a little sad would go? [Choose someone who volunteers.] What about a face that was neither happy nor sad? It would go here. Or a face that was just a tiny bit happy would go here. So you could show me whatever way you feel by putting a mark on this line where the face would go. You could show me that you felt very happy [point] or a little happy, or a tiny bit happy, or neither happy nor sad, or a little sad, or very sad, or any way you feel.

Now turn to page 12. On this page is a picture of a child reading a book with his teacher. There is also a picture of two faces and a line like the one on the board. Show me how you feel when you are reading with the teacher by marking where the face would go, just as we did on the blackboard. [Pause.]

Now turn to page 13. This child is reading a book by himself. Show me how you would feel if you were reading a book by yourself by marking where the face would go. [Pause.]







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